



PROPOSAL | February 2017



Water Engineering and Planning Services
“OneWater Morro Bay”

 **carollo**
Engineers...Working Wonders With Water®

February 24, 2017

Mr. Rob Livick, PE/PLS
Public Works Director/City Engineer
City of Morro Bay - Public Works Department
955 Shasta Avenue
Morro Bay, CA 93442

Subject: Proposal to Provide Professional Engineering Services – OneWater Morro Bay

Dear Mr. Livick:

The continued uncertainty of California's water future, and the major change being made to the City's wastewater system, along with a new integrated OneWater approach, have led the City to look for a partner that can help them navigate a complex water picture. OneWater Morro Bay completes the picture that is being brought into focus by the WRF project and Master Reclamation Plan, and will be the guiding document for localizing the City's water supply and limiting long-term dependence on state water. Smart planning, and building a "right size" capital improvements program that does not overburden the community is paramount to the success of this project. Carollo has helped many agencies across the state do just that. We provide the City with the following benefits:

- **Integrated master planning experts** with a broad range of technical know-how related to all facets of the project. Our project team has completed multiple integrated water, wastewater, recycled water, and stormwater master plans for many agencies in California, and in particular, for communities located in the Coastal Zone facing many of the same challenges as Morro Bay. Our integrated planning experience is unmatched by others in the industry, and when paired with our desalination expertise, allows us to deliver a high-quality integrated master plan that will be accepted by your City Council and ratepayers.

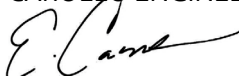
Project manager **Eric Casares** brings a decade-long history of service with the City of Morro Bay through his work on previous master planning efforts. Eric will use lessons learned, knowledge of your community, and working relationships with key team members **Tim Loper**, **Ryan Orgill**, **Lydia Holmes**, and **Elisa Garvey** to help the City identify the long-term vision for its water, wastewater, and stormwater programs.

- **A partner-focused, facilitated approach** that brings everyone to the table, and balances the many needs of the City to provide optimized solutions. No one knows more about your infrastructure and the opportunities for diversifying the City's water supply than you. Carollo has demonstrated our ability to work collaboratively with your staff, and in order for this project to be successful, this collaboration must extend to stakeholders, including the Public Works Advisory Board and the teams leading the WRF Master Plan and Master Reclamation Plan. We have seen the benefits of this approach when it is coupled with sound and proven planning principles.

We look forward to working with you on this important project.

Sincerely,

CAROLLO ENGINEERS, INC.



Eric T. Casares, PE
Project Manager



Tim Loper, PE
Project Engineer

Contents

- PROPOSAL SUBMITTAL SUMMARY
- QUALIFICATIONS
- WORK PROGRAM
- SUBMITTAL FORMS
 - Certificate of Insurance
 - Proposal Submittal Form — Subconsultant Listing
 - Proposal Submittal Form — References
 - Proposal Submittal Form — Statement of Past Contract Disqualifications
- APPENDIX
 - Resumes
 - Acknowledgment of Addenda
 - Agreement Review Comments

PROPOSAL SUBMITTAL SUMMARY

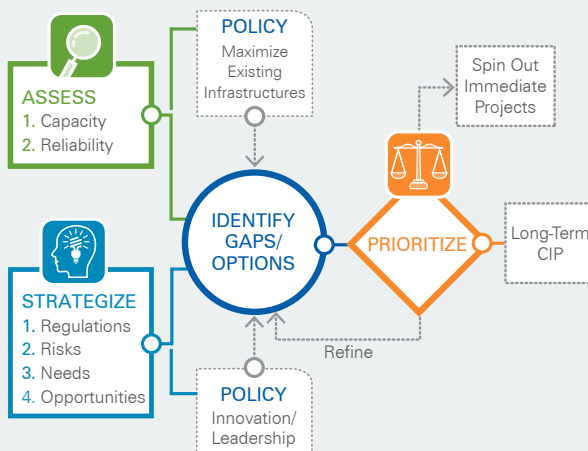
Understanding the Big Picture

It's all connected...Your decisions for water supply affect your wastewater quality, which affects your ability to reuse it. Stormwater can offset or augment potable supplies. Regulatory requirements are starting to overlap. Financially it's all connected as well, with your customers paying for every service. Considering these connections allows for a more comprehensive evaluation of cause/effect, opportunities, and funding. This approach is also consistent with EPA's Integrated Planning Framework, which focuses on providing greater flexibility in meeting challenges and can lead to creative solutions, such as green infrastructure.

ALL WATER IS ONE WATER



Our Approach Provides a Comprehensive Evaluation and Creative Solutions



Carollo's sole focus on all things water allows us to dive deep into the subject. We have national expertise and yet local presence that allows developing relationships with our clients, like you. We will work hand in hand with you, as we have in the past, to use this planning effort to develop detailed, comprehensive, and creative solutions for all aspects of water related to the City. Our overall approach is to follow a step-wise process to **1) Assess,** **2) Strategize,** and **3) Prioritize.** City staff will be involved during every step. We want to make sure that their key issues have been addressed and that the resulting CIP and identified projects reflect the best options for the City to maximize existing investments, plan for the future, and move toward sustainable supplies.

PROVEN MANAGEMENT TEAM

Both Eric Casares and Tim Loper are committed to your project. They are experienced in coordinating all project elements and will make sure the City's expectations are being met on time and budget.



STRONG TECHNICAL SUPPORT

Inge Wiersema, Lydia Holmes, Elisa Garvey, Ryan Orgill, Tom Seacord, David Harkins, and Robb Grantham bring unique experience in the areas of water and wastewater planning and design, stormwater management, hydraulic modeling, desalination, groundwater, and financial services. They know how to move the City toward its goal of sustainable water resources.

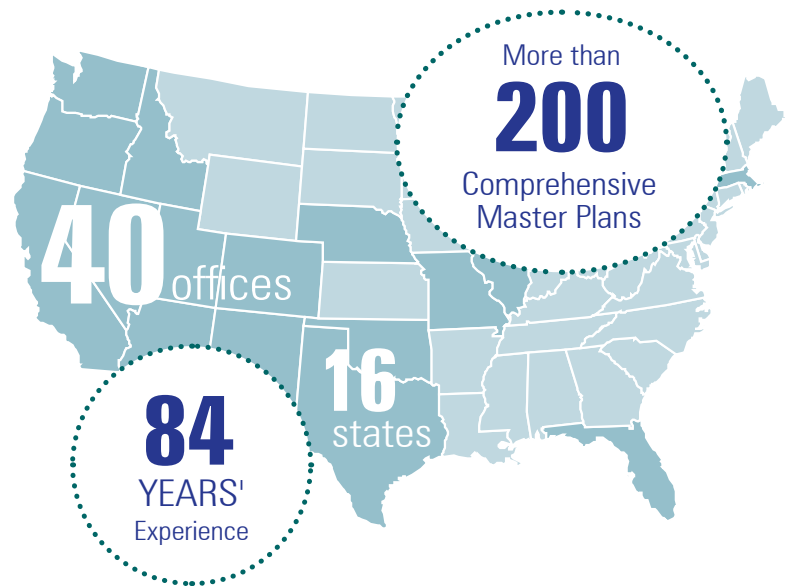


QUALIFICATIONS

The Carollo team brings a proven track record of managing integrated water, wastewater, and stormwater master plans throughout California's Central Coast and the United States. Our experience and proven commitment can give the City confidence in our ability to deliver an innovative integrated master plan that optimizes your future investment.

FIRM OVERVIEW

Carollo Engineers is a full-service, environmental engineering firm that has been exclusively providing water and wastewater services across the U.S. for 84 years. Unlike our competitors, we only provide water-related engineering services. In fact, with a staff of more than 900 professionals located in 40 offices across the nation, we are the largest firm in the country that is 100 percent focused on water-engineering solutions. Our exclusive focus on water attracts water industry leaders who have a passion for water and the expertise required to solve our most pressing water challenges.

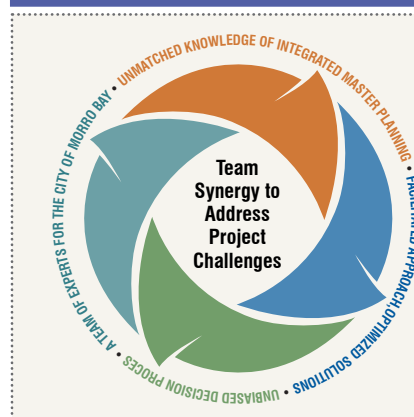


Capabilities and Expertise

Carollo is an industry leader in the development of award-winning, comprehensive master plans for water and wastewater agencies facing a variety of complex issues. Master planning efforts have been an integral aspect of Carollo's experience throughout the company's history. In the past 15 years alone, we have provided planning services for more than 100 municipal clients with service area populations ranging from 5,000 to more than one million. This includes more than 100 wastewater treatment

facilities, more than 100 water treatment facilities, more than 100 recycled water facilities, and extensive water distribution and wastewater collection systems.

Our professionals provide cost-effective solutions that utilize existing facilities to the greatest possible extent, and limit treatment alternatives and capital expenditures to the most reliable and easy to implement options.



Why Carollo?

A Proven Team with a Long History of successful integrated master planning projects throughout California and the U.S.

A Partner-Focused, Facilitated Approach that brings everyone to the table and balances the many needs of the City to provide optimized solutions.

Integrated Master Planning Experts with a broad range of technical know-how related to all facets of the project.

Unbiased Decision Process that leads to optimized alternatives.

Planning, Engineering, Design, and Construction of Water, Wastewater, and Stormwater Facilities

Carollo has been a leading expert in the planning, design, and construction management of water and wastewater projects for public agencies, private developers, and industrial and agribusiness companies.

Our history covers work on more than 25,000 projects, from small studies to large, complex design-build projects. This includes more than 200 water treatment plants with a total capacity of more than 3.5 billion gallons per day, and more than 300 wastewater treatment plants (WWTPs) ranging in size from less than 1 mgd to more than 300 mgd. Our construction management services include more than \$1 billion in municipal water and wastewater facilities in the last 10 years.

To help our clients address a broad range of stormwater related challenges, Carollo provides regulatory/permit support for MS4s, water quality evaluations and management planning (identification and evaluation of BMPs for pollutant reduction and capture/treatment/reuse), and stormwater BMP design.

California Central Coast Experience Addresses Issues Close to Home

Our central coast clients face some of the most stringent water quality, air, and land use regulatory requirements in the country. In order for our clients to stay on top of these regulations, they expect us to not only plan and build new facilities, but do so in a manner that proactively addresses future regulatory requirements.

Our ability to serve our clients in this capacity is enhanced by our strong working relationship with the Central Coast Regional Board and long history of involvement with the California Coastal Commission.



ENR has selected Carollo as California's Design Firm of the Year.

Carollo also ranks number one among all design firms who work solely in water, based on ENR's April/May, 2016 "Top 500 Design Firms" ranking.

In response, Carollo has incorporated an extensive energy management program into our recent master plans. Along the same lines as regulatory compliance, our planning efforts reflect the progressive nature of the state, incorporating sustainability, reuse/advanced treatment, low-impact development, creative financing, and stakeholder/public outreach to address the overall long-term needs and values of our clients and their communities.

RECENT RELEVANT EXPERIENCE

The following pages provide select project descriptions, along with client contacts, which are especially relevant to this effort. We encourage you to contact these references to verify the quality of our services on these similar projects.

FIGURE 1

Integrated Planning Experience is What Sets Carollo Apart

Other firms can claim they have infrastructure planning experience, but Carollo has established itself as a leader in the development of integrated and comprehensive master plans for cities and agencies facing a variety of complex issues. Carollo's experience with integrated plans is what sets us apart from the rest.

More importantly, our project team has completed multiple integrated water, wastewater, recycled water, and stormwater master plans for many agencies in California. This integrated planning experience allows us to deliver a high-quality integrated master plan in an efficient manner. Our integrated planning approach results in sound planning documents.

Through our experience we know exactly which tasks need to be closely coordinated to avoid redo work, stay on schedule, and obtain consistent master plans that the City can implement with confidence. Correlating project phasing and even pipeline alignments between the recommended potable, sewer, and stormwater projects is imperative to avoiding unnecessary construction burdens and saving costs for the City.

As seen from the map below, several of our integrated planning projects have occurred for cities and agencies located in the Coastal Zone. We understand the influence the California Coastal Commission can have on infrastructure projects, and that recommendations made in the planning documents must be consistent with individual local coastal plans.



CITY OF OCEANSIDE, CA Integrated Master Plans



Carollo prepared the City of Oceanside's Water, Sewer, and Recycled Water Master Plans to account for land use changes, recent facility upgrades, new population projections, changes in the federal, state, and local regulatory environment, a recently completed needs assessment and structural analysis, and to also include proposed updates, improvements, and expansions to the water and sewer systems and facilities.

The purpose of this project was not just an update of the existing master plans or a touch-up of old maps, but rather a new set of plans that will serve as an accurate roadmap of which projects to implement and when during the next decades. The master plan updates consisted of four major components that needed to be integrated into a comprehensive CIP. The CIP was used to develop a new financial plan.

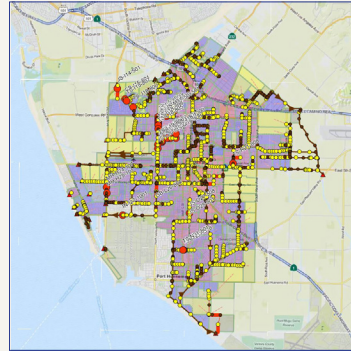
The project also included updates and calibration of the water hydraulic model, construction of sewer system hydraulic models, water and recycled water demand forecasting, sewer flow projections, and water and sewer distribution system evaluation. Carollo was responsible for presenting planning study findings to various committees, commissions, and the City Council.

Client Reference: Jason Dafforn, Former Water Utilities Manager, 951-674-3146

Team Involvement: Tim Loper, Inge Wiersema, Ryan Orgill, Robb Grantham, V&A Consulting

Completion Date: 2015

CITY OF OXNARD, CA Public Works Integrated Master Plan



Carollo prepared the City of Oxnard's Public Works Integrated Master Plan, which used the latest in integrated systems analysis and optimization techniques to establish a utility infrastructure road map that will

improve performance, minimize costs, and set the long-term direction of Oxnard's utilities for years to come.

Work included conducting a sensitivity assessment of level-of-service goals and key performance indicators; providing an integrated data collection and QA/QC plan; developing new standards, procedures, and protocols for project execution; conducting a dynamic and integrated optimization analysis that is easily updatable; developing standardized work plans and sequencing of project tasks and linkages; and providing clear and defensible costs and recommendations.

Key innovations on the project included elements such as a preliminary assessment of water quality issues (e.g., hardness versus TDS) to identify flexibility and cost savings in the selection of potential treatment options.

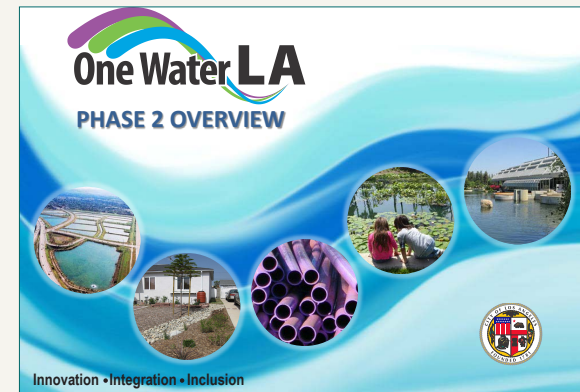
The Integrated Master Plan effort included developing master plans for water, wastewater, stormwater, and recycled water. Asset condition, system modeling, and capacity evaluations were performed for all systems. A comprehensive CIP was developed to prioritize expenditures across all service lines.

Client Reference: Daniel Rydberg, Public Works Director, 805-385-8055

Team Involvement: Tim Loper, Inge Wiersema, Lydia Holmes, Ryan Orgill

Completion Date: 2016

CITY OF LOS ANGELES, CA One Water LA 2040 Plan



The City of Los Angeles embarked on the One Water LA 2040 Plan to provide a strategic vision and implementation plan to manage all types of water resources as "One Water."

The Plan will ultimately guide the City with strategic and multi-billion dollar decisions for water infrastructure projects that will make LA a more water resilient and sustainable City. The Plan incorporates drastic changes in the water landscape with increased population, substantial reductions in wastewater flows due to water conservation, compliance with new stringent stormwater quality regulations, severe statewide drought, and increasing threats of climate change water supply reliability.

The Plan takes a holistic and collaborative approach, to consider all water resources from surface water, groundwater, potable water, graywater, wastewater, recycled water, and stormwater as "One Water." The plan identifies multi-departmental and multi-agency integration opportunities to manage water in a more efficient, cost effective, and sustainable manner.

The project includes an extensive stakeholder outreach program involving 14 City departments, six regional agencies, non-governmental organizations, special interest groups, academia, and the general public.

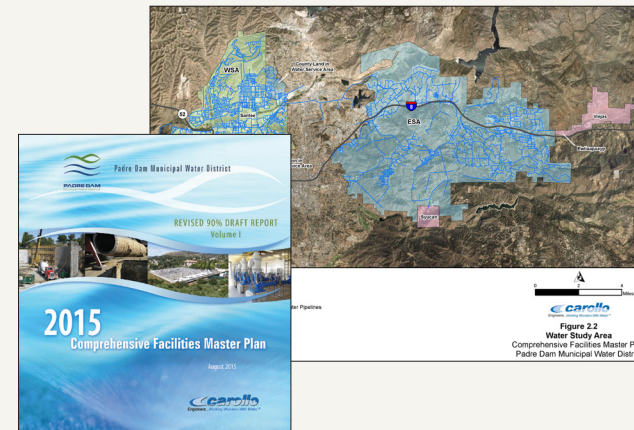
Carollo is the prime consultant for this project, leading a team of 20+ subconsultants and working in close collaboration with the City to prepare the One Water 2040 Plan and Programmatic Environmental Impact Report.

Client Reference: Ali Poosti, Principal Civil Engineer, 323-342-6228

Team Involvement: Tim Loper, Inge Wiersema, Elisa Garvey

Completion Date: 2017

PADRE DAM MUNICIPAL WATER DISTRICT, CA Comprehensive Facilities Master Plan



Carollo was hired by the Padre Dam Municipal Water District in 2013 to update its 2001 Integrated Facilities Plan (IFP). The 2001 IFP addressed water, wastewater, and recycled water services within the District's region through 2020. Since the completion of this IFP, significant changes have occurred within the District's service area with respect to water use and wastewater flows.

A key change that impacts the timing and sizing of infrastructure improvements was the general reduction in per capita water use and wastewater flows due to water conservation efforts, water scarcity awareness, and the economic downturn that occurred after 2007. The updated master plans provided accurate and usable documents that can guide the District with budgeting and implementation of capital improvement projects for the next two decades.

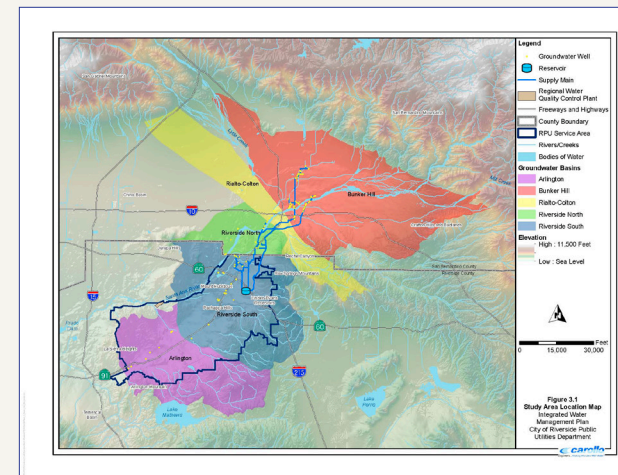
Other project elements included developing (recycled) water demand/sewer flows forecasting, water supply analysis, hydraulic models updates for the water and recycled water systems, creation and calibration of a new sewer system model, and field condition assessment of key facilities. In addition, the feasibility of the wastewater plant expansion for an IPR project was evaluated.

Client Reference: Mark Niemiec, Manager of District Projects, 619-258-4766

Team Involvement: Tim Loper, Inge Wiersema, Ryan Orgill, V&A Consulting

Completion Date: 2014

CITY OF RIVERSIDE, CA Integrated Water Management Plan



Carollo completed the Integrated Water Management Plan for the City. This project builds upon a large number of previous planning documents that required integration to align assumptions and develop a master planning document and CIP.

The objective of the project was to develop a long-term supply strategy to meet the City's projected potable, non-potable, and recycled water demands.

This project integrated water supply, water distribution, and water treatment improvements into a single comprehensive CIP with a planning horizon of 2035.

Some of the key project components of this IWMP were:

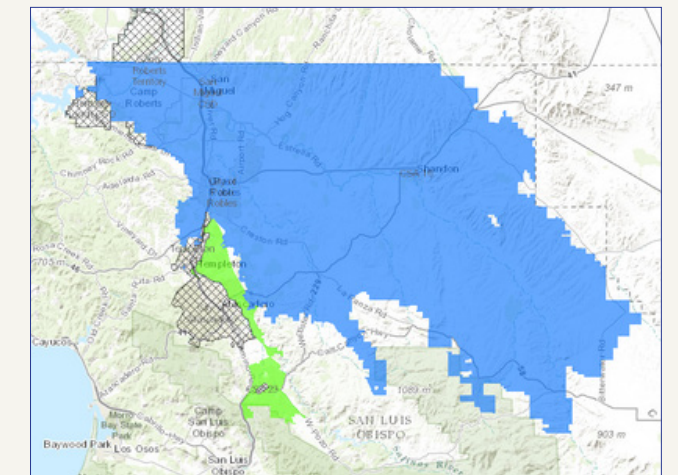
- Basis of planning.
- Demand projections.
- Water supply analysis.
- Supply optimization modeling.
- Water quality analysis.
- Distribution system master plan.

Client Reference: Kevin Milligan, Assistant General Manager, 909-826-5793

Team Involvement: Tim Loper, Inge Wiersema

Completion Date: 2013

COUNTY OF SAN LUIS OBISPO, CA Paso Robles Basin Supply Options Study



The Paso Robles Groundwater Basin has experienced dropping groundwater levels over several decades. In an effort to ensure sustainable water supply for customers the Paso Basin serves while meeting its management objectives, San Luis Obispo County retained Carollo for a Supply Options Study to identify sources of supply that can be obtained to supplement the Basin.

We developed a prioritized list of the most beneficial and viable options for procuring State Water Project water, Lake Nacimiento, local exchanges, and recycled water to wholly, or in part, stabilize groundwater levels and to provide a clear path forward to obtaining these supplies for the Paso Basin.

Ongoing efforts revolve around using the recently completed groundwater model to determine the benefits of different supply options, including evaluation of where benefits can be maximized in the basin through direct use (offsetting pumping) or through recharge.

Client Reference: Courtney Howard, Water Resources Division Manager, 805-235-2810

Team Involvement: Lydia Holmes

Completion Date: Ongoing

CONSULTANT TEAM

The Right Team for Morro Bay

We have combined Carollo's local and national resources to assemble the right team of individuals with specialized expertise in water, wastewater, and stormwater. Our team will provide you a technically sound, comprehensive, and fundable set of plans to guide future expenditures and deliver multiple benefits for every project.

Led by project manager **Eric Casares**, Carollo has assembled a project delivery team of specialists based on a simple but powerful principle—put the most qualified people in the roles essential to meeting project goals. Eric brings effective and proactive project management skills, a focus on client services, and extensive relevant experience managing projects of similar complexity and scope. He is familiar with the City's staff and practices from his recent work on the Wastewater Treatment Facilities Master Plan. Our team will be supplemented by V&A Consulting Engineers, who will provide flow monitoring services.

Our project organization is shown in the adjacent chart. On the following pages, we summarize our team's qualifications and experience. Resumes are provided in the Appendix.



Project Manager

Eric Casares, PE

Project Engineer

Tim Loper, PE

Technical Support

Alternatives Analysis/Master Reclamation Plan Integration - Inge Wiersema, PE

Alternative Supply Analysis - Lydia Holmes, PE

Stormwater Analysis - Elisa Garvey, PhD, PE

Hydraulic Modeling - Ryan Orgill, PE

Hydrogeology - David Harkins, PhD, PE

Desalination - Tom Seacord, PE

Financial Sustainability - Robb Grantham

Flow Monitoring - Kevin Krajewski, PE¹

Subconsultant

1. V&A Consulting Engineers

PROVEN PROJECT MANAGEMENT

We bring a project management team consisting of senior leadership you can trust. Both Eric and Tim have extensive experience coordinating all elements of the project required for a technically sound integrated master plan and complying with the goals established for the project.



Project
Manager



Project
Engineer

Eric Casares is a project manager with 12 years of experience in wastewater planning and design. Eric has completed facility planning studies for many cities and agencies in California, and is currently managing the development of an integrated wastewater treatment and collection system master plan for the City of King City. Eric brings a history of service and long-standing relationship with the City of Morro Bay through his work on the 2007 Facility Master Plan and California Men's Colony WWTP Capacity Evaluation. Eric will use lessons learned; working relationships with key team members Tim, Ryan, Lydia, and Elisa; and demonstrated ability to work collaboratively with your staff to help the City identify the long-term vision for its water, wastewater, and stormwater programs.

Tim Loper has 16 years of experience in infrastructure and design master planning. Tim has served as project manager and/or project engineer for more than 50 water, wastewater, stormwater and/or recycled water master plans and modeling projects, including projects for the cities of Oakland, Oceanside, Banning, Modesto, Fresno, Tulare, and Galt, and West County Wastewater District. He will assist Eric with managing project scope, budget, and schedule and will make sure your expectations are met.

STRONG TECHNICAL SUPPORT

Strong technical support for this effort will be provided by the following discipline experts.



Alternatives
Analysis/
Master
Reclamation
Plan
Integration

Inge Wiersema is an expert in developing comprehensive water, wastewater, and recycled water master plans for public utilities. With 22 years of experience specializing in water, recycled water, wastewater, stormwater, and water resources master planning, Inge has been involved in 100 master plans/hydraulic modeling projects in California.



Alternative
Supply
Analysis

Lydia Holmes has 23 years of experience in water, wastewater, and recycled water master planning, permitting, and design. Her planning experience includes water supply assessments; projecting flows and loads; evaluating wastewater treatment, reuse, and disposal alternatives; evaluating sustainability; evaluating receiving water limitations; and leading stakeholders through decision processes to determine preferred projects.



Stormwater
Analysis

Elisa Garvey has 16 years of experience in water resources planning that has required simultaneous attention to detailed planning analyses and long-term goals and strategies. Elisa has led Carollo's work on regional salt and nutrient management plans, stormwater management plans, and a desktop study on stormwater diversions to WWTPs.



Hydraulic
Modeling

Ryan Orgill has 13 years of experience dedicated specifically to infrastructure master planning projects. He is an expert in the development of hydraulic models for water and recycled water distribution, sewer collection, and stormwater systems. Ryan has worked on infrastructure master planning and hydraulic modeling projects for clients throughout the western United States, including those in California, Oregon, Washington, Nevada, Arizona, and Texas. Ryan and Tim have worked together on more 20 infrastructure master planning projects.



Hydrogeology

David Harkins has 21 years of experience as a water resources and environmental engineer specializing in the design and planning of projects dealing with water supply, water quality analysis and modeling, water availability modeling, water resources management, and groundwater modeling and management planning.



Desalination

Tom Seacord has been and remains at the forefront of desalination technology and current regulatory challenges faced by California ocean desalters. He has 20 years of experience and is a nationally recognized expert in the field of desalination. He has taken lead roles in desalination project planning, pilot testing, rehabilitation, permitting, design, construction, and startup. His work has included the development of a seawater desalination design in California that holds the record for lowest energy use, and the development of a state-of-the-art science and regulations support model for implementing seawater intakes and brine disposal.



Financial
Sustainability

Robb Grantham has 19 years of experience specializing in financial and management analyses for wastewater, water, stormwater, and solid waste utilities. He has worked with more than 200 municipalities throughout the United States, developing rates and integrated long-range financial plans for numerous agencies.



Flow
Monitoring

Kevin Krajewski has 21 years of experience with flow monitoring, assessment, design, and cost analysis of sanitary and storm sewer facilities and collection systems, as well as development of inventory and condition assessment databases for collection systems. Kevin has served as the QA/QC advisor and data manager on dozens of projects, has managed multiple flow monitoring projects, and has provided field support throughout California.

TEAM MEMBER EXPERIENCE SUMMARY

Team Member	Experience Summary
Eric Casares, PE – Project Manager	
Carollo Engineers, Inc. Civil Engineer: CA Experience: 12 Years	<ul style="list-style-type: none"> Project engineer for the City of Morro Bay/Cayucos Sanitary District, CA, 2007 Wastewater Treatment Facilities Master Plan. Project manager for the City of Morro Bay, CA, California Men's Colony WWTP Capacity Evaluation. Project manager for the Cambria Community Services District Enhanced Compliance Action Report and 10 Percent Design. Project manager for the City of King City, CA, WWTP and Collection System Master Plans. Project engineer for the Mariposa, CA, WWTP Master Plan. Project manager for preliminary design of the City of Pismo Beach, CA, Regional Groundwater Sustainability project (indirect potable reuse). Project engineer for the City of Visalia, CA, Water Conservation Plant Master Plan.
Tim Loper, PE – Project Engineer	
Carollo Engineers, Inc. Civil Engineer, CA Experience: 16 Years	<ul style="list-style-type: none"> Project engineer for the City of Banning Water and Wastewater Master Plan. Project engineer for the City of Oceanside, CA, Integrated Master Plan. City of Tulare, CA, Stormwater, Sewer, and Water Master Plans and Sewer System Management Plan. City of Cotati, CA, GIS Implementation, Water, and Sewer Utility Master Plans, and 2010 Urban Water Management Plan. City of Galt, CA, Water Distribution, Wastewater Collection, and Stormwater Master Plans. Cities of Los Banos, Modesto, and Hughson, CA, Wastewater Collection System Master Plans.
Inge Wiersema, PE – Alternatives Analysis/Master Reclamation Plan Integration	
Carollo Engineers, Inc. Civil Engineer, CA Experience: 22 Years	<ul style="list-style-type: none"> Assistant project manager for the One Water LA 2040 Plan, a holistic and collaborative approach to consider all water resources (surface water, groundwater, potable water, gray water, wastewater, recycled water, and stormwater) as "One Water." Project manager for the City of Oceanside, CA, Water Master Plan for the water and wastewater systems, and development of a new recycled water system model. Project engineer for Integrated Water Management Plan for the City of Riverside, CA. Project manager for the Padre Dam Municipal Water, CA, Comprehensive Facilities Master Plan for water, wastewater, and recycled water infrastructure.
Lydia Holmes, PE – Alternative Supply Analysis	
Carollo Engineers, Inc. Civil Engineer, CA Experience: 23 Years	<ul style="list-style-type: none"> Project manager for the Zone 7 Water Agency, CA, Tri-Valley Potable Reuse Feasibility Study. Project manager for the County of San Luis Obispo, CA, Paso Robles Basin Supply Options Study. Project manager for San Mateo, CA, Integrated Wastewater Master Plan. Principal-in-charge/project manager for Soquel Creek Water District, CA, Groundwater Replenishment Feasibility Study.

Team Member	Experience Summary
Elisa Garvey, PhD, PE – Stormwater Analysis	
Carollo Engineers, Inc. Civil Engineer, CA Experience: 16 Years	<ul style="list-style-type: none"> • Engineer for the stormwater portion of the City of Los Angeles, CA, One Water LA 2040 Plan. • Project manager for the Bay Area Clean Water Agencies, CA, project to develop a white paper on stormwater diversions. • Project manager for the City of Bakersfield, CA, Stormwater Management Plan Update.
Ryan Orgill, PE – Hydraulic Modeling	
Carollo Engineers, Inc. Civil Engineer, CA, NV Experience: 13 Years	<ul style="list-style-type: none"> • Engineer for the City of Oceanside, CA, Sewer System Master Plan. • Project engineer for the City of Tulare, CA, Sewer, Water, and Stormwater Master Plans and Sewer System Management Plan. • Staff engineer for the City of Galt, CA, Wastewater Collection, Water Distribution, and Stormwater Master Plans.
David Harkins, PhD, PE – Hydrogeology	
Carollo Engineers, Inc. Professional Engineer, TX, OK, MS Experience: 21 Years	<ul style="list-style-type: none"> • Evaluated groundwater movement in Comal County, TX, for the Edwards Aquifer Authority Spring Flow Evaluation. • Project manager for Groundwater Availability Modeling in Robertson County, TX, for the OSR Water Supply Corporation. • Assisted in modifying the Texas Water Development Board's Groundwater Availability Model.
Tom Seacord, PE – Desalination	
Carollo Engineers, Inc. Environmental Engineer ID, IL, FL, OH, UT, GA, TX, SC Experience: 20 Years	<ul style="list-style-type: none"> • Project manager/project engineer for the City of Santa Barbara, CA, Seawater Desalination Plant Rehabilitation Study. • Project manager/project engineer for the design of the Cambria Community Services District, CA, 1.2-mgd Seawater Desalination Plant. • Project engineer for the Affordable Desalination Collaboration's Seawater Desalination Demonstration project at Port Hueneme, CA.
Robb Grantham – Financial Sustainability	
Carollo Engineers, Inc. Experience: 19 Years	<ul style="list-style-type: none"> • Specializes in financial and economic analyses for water, wastewater, stormwater, and solid waste utilities. • Worked with more than 200 municipalities throughout the U.S., and has developed organizational assessments and integrated long-range financial plans. • Provided financial services for many master planning projects, including the City of Sunnyvale Water Pollution Control Plant Master Plan, City of Oceanside Water Utilities Financial Plan (water, wastewater, stormwater), and City of Riverside Wastewater Master Plan and Wastewater Bond Issuance.
Kevin Krajewski, PE – Flow Monitoring	
V&A Consulting Engineers Civil Engineer, CA Experience: 21 Years	Flow monitoring project manager on the following projects: <ul style="list-style-type: none"> • Central Contra Costa Sanitary District, CA, Hydraulic Model Update. • Napa Sanitation District, CA, Flow Monitoring & Inflow/Infiltration Mitigation Services. • City of Azusa, CA, Sewer Master Plan Flow Monitoring. • City of Modesto, CA, Wastewater Master Plan.

**CAROLLO ENGINEERS, INC.
FEE SCHEDULE**

**As of January 1, 2017
California**

	<u>Hourly Rate</u>
Engineers/Scientists	
Assistant Professional	\$168.00
Professional	205.00
Project Professional	243.00
Lead Project Professional	262.00
Senior Professional	284.00
Technicians	
Technicians	126.00
Senior Technicians	176.00
Support Staff	
Document Processing / Clerical	111.00
Project Equipment Communication Expense (PECE) Per DL Hour	11.70
Other Direct Expenses	
Travel and Subsistence	at cost
Mileage at IRS Reimbursement Rate Effective January 1, 2017	\$.535 per mile
Subconsultant	cost + 10%
Other Direct Cost	cost + 10%
Expert Witness	Rate x 2.0



This fee schedule is subject to annual revisions due to labor adjustments.

V&A Consulting Engineers
2017 Fee Schedule
 2017 Rates Effective January 1, 2017 • Rates include Overhead & Profit

Position	Rate 2017
Principal-in-Charge (PIC)	\$297
Senior Project Manager	\$259
Project Manager	\$232
Senior Project Engineer	\$216
Project Engineer	\$194
Associate Engineer	\$173
Assistant Engineer	\$141
CADD Designer	\$141
Engineering Assistant	\$130
Senior Technician	\$124
Technician	\$108
Project Admin/Clerical	\$86
Other Direct Costs	
Subcontractor/Subconsultant: Cost + 10%	
Soil and Coating Sample Analysis: Cost + 10%	
Travel (Air/Hotel/Per Diem/Rent-A-Car): @ Cost	
Auto/Truck Mileage: @Federal Rate	
Field Truck: \$85/Day	
Confined Space Entry Truck and Safety Equipment: \$130/Day	
Reproduction, Printing, Shipping: @ Cost	

WORK PROGRAM

The continued uncertainty of California's water conditions, and the dynamic nature of the City's wastewater system, along with a new integrated OneWater approach, have brought the City to the point of looking for a consultant to help them navigate a complex water picture. Smart planning and building a responsible self-sustaining water future are paramount to the success of this project. Carollo has helped many agencies across the state do just that.

PROJECT UNDERSTANDING

The City of Morro Bay is currently faced with undertaking the largest capital project in the City's history with the relocation and upgrade of the Water Reclamation Facility (WRF). While the WRF project at its core is being driven by regulatory requirements, it also represents an opportunity for the City to augment their water supply portfolio. The WRF Master Plan currently being completed by the City is answering the first important question: what are the facilities necessary to relocate, rebuild, and replace the City's WWTP with a new WRF capable of meeting disinfected tertiary treatment standards? The Master Reclamation Plan is answering a second important question: what is the highest and best use of the City's recycled water? OneWater Morro Bay provides a critical link between these two projects, will confirm the direction of the WRF project, and will answer several key questions left unanswered for the City:

- **Sewer Master Plan.** What improvements to the collection system can be made to reduce I/I and subsequently reduce the capacity and cost of the pump station needed to support the new WRF, and what facilities (and capacities) are needed to convey the wastewater to the new WRF location? Identification of I/I mitigation potential and how that effects the wastewater conveyance facilities will play a large role in the sewer master plan.
- **Stormwater Master Plan.** As a component of the general fund, stormwater projects can often be difficult to implement. What are the impacts of direct stormwater connections on the design of the new wastewater pump station, and are there opportunities to fund these projects through the sewer enterprise fund?
- **Water Master Plan.** In addition to recycled water, what are the opportunities and costs to create alternative sources and localize supply

for the City, including seawater desalination and increased utilization of groundwater?

- **OneWater.** Since the City provides water, sewer, and stormwater services to the community, it is important to understand the combined rate impacts to its customers. How does the City address its needs while still maintaining financial sustainability?

Sewer Master Plan

Of all the components of OneWater Morro Bay, the sewer master plan is the most time sensitive due to its influence on the design of the pump station that will convey the City's wastewater from the existing WWTP to the new WRF site. The WRF Master Plan is currently using a peak season dry weather flow to peak hour flow peaking factor of 6.7, to define the pump station's design criteria. By identifying the areas in the system with high I/I, such as areas in the north of the City with known expansive soils, the costs of projects aimed at reducing I/I can be weighed against the capital and O&M costs associated with pumping and treatment of higher wet weather flows.

Stormwater Master Plan

Like the sewer master plan, the stormwater master plan findings could have an impact on the design criteria for the future pump station. In addition, the City may have the opportunity to further localize their supply through stormwater capture and recharge. Communities such as Los Angeles have realized the benefits of stormwater recharge and a true OneWater plan must consider all opportunities for increasing potable supply reliability.

Water Master Plan

The City is in a unique position. Unlike most communities in California, the City has a number of

different supply alternatives at its fingertips. While in recent years the City has relied heavily on water from the State Water Project (SWP), it also has groundwater and seawater desalination as options. However, none of these supply options are without their challenges. State water carries inherent reliability concerns and uncertainty regarding the future of the Bay/Delta project and the impacts on long-term costs. The City's contract is also take or pay. For these reasons, the City has been vocal about minimizing state water reliance.

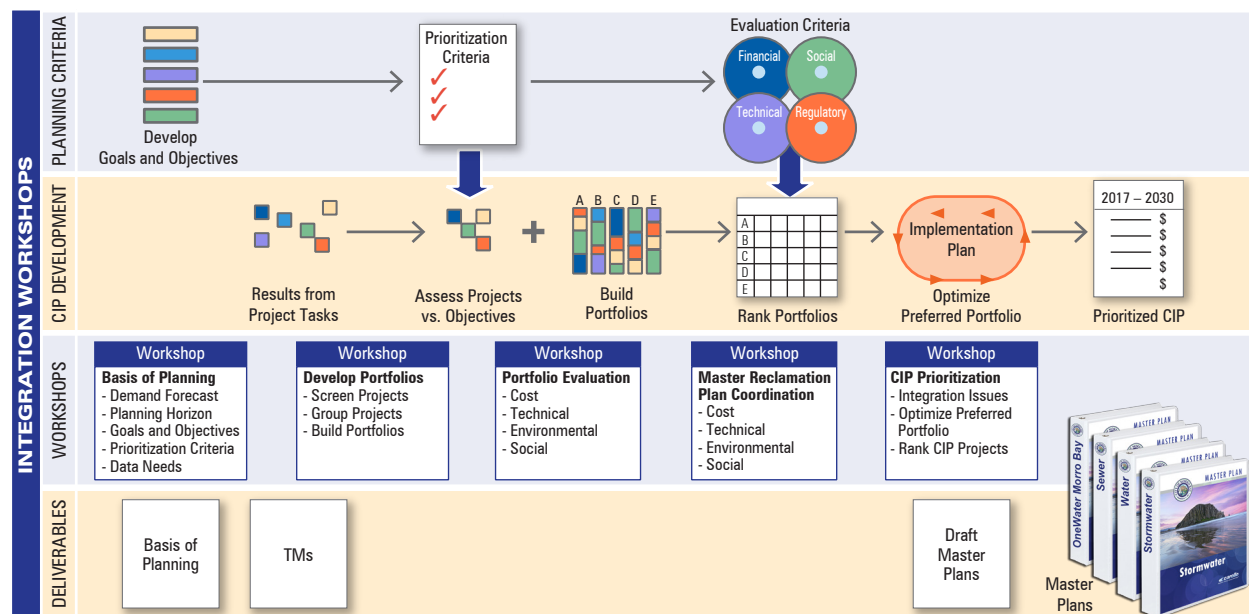
The City's groundwater sources include the Morro Valley and Chorro Valley Basins. The Morro Valley Basin is primarily constrained by seawater intrusion, while the Chorro Valley is limited by the stream flow requirements in Chorro Creek and elevated nitrate levels. Stream flow restrictions make it difficult for the City to utilize this resource during the summer when it is most needed. Opportunities for storage of this supply during the winter in locations such as Whale Rock, should be alternatives evaluated in the water master plan. While the desalination facility operates periodically to treat brackish water from the Morro Valley wells during peak summer demand periods or during SWP outages, the seawater desalination facility has not been operated since the 1990s. The relocation of the desalination facility and the true cost of its operation must be well understood for OneWater Morro Bay to be a success.

The water supply assessment is just one side of the water master plan coin. The water master plan will also help inform the full rate impacts of the water system (i.e., R&R needs), identify operational improvements such as minimizing pressure zones, and evaluate mixing scenarios using additional storage currently being planned by the City.

WHAT WE HEARD FROM YOU

There are several drivers prompting this project, and several challenges facing the City. Most notably, these include:

1. Strategic water resources planning that targets optimal use of the City's existing resources, and evaluates the potential to reduce the dependence on state water.
2. Development of an integrated plan that is closely coordinated with the Draft Water Reclamation Facility Master Plan, especially when it comes to analysis of flow reductions related to potential I/I mitigation, and sizing and locating the wastewater pumping station.
3. Understanding how groundwater recharge, water desalination, and potential agricultural use can bolster the City's water supply portfolio.
4. Development of an integrated plan that incorporates the findings from the Master Water Reclamation Plan to determine the optimal approach to limiting the City's dependence on state water.



Your infrastructure plans are dictated by unique drivers. For an integrated plan, we will work with you to create project portfolios that compare and contrast complimentary and competing elements and define optimal solutions.

HOW WE WILL MEET YOUR EXPECTATIONS

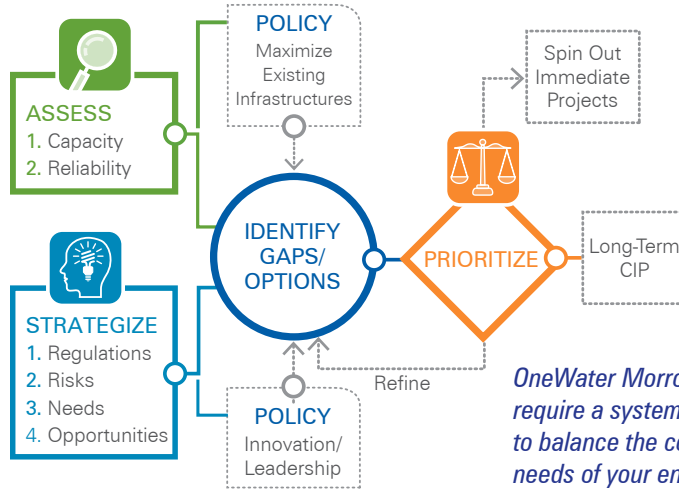
You are looking for a consultant with exceptional expertise and a flexible teamwork approach, with whom to forge an effective partnership. This will be key to the successful and timely completion of the work and development of fundable plans.

We are that team.

A CONFIDENT PLAN FOR YOUR FUTURE

The City needs to establish a confident plan for your near- and long-term CIP—a plan that addresses existing systems, positions you for future opportunities to ensure sustainable water resources, and maintains rate affordability for the members of the community.

Assess, strategize, and prioritize is an approach that systematically tackles all of the elements to ensure delivery of a CIP that meets the goals of your strategic vision.



OneWater Morro Bay will require a systematic approach to balance the conflicting needs of your entire water resource portfolio.

INFRASTRUCTURE PLANNING APPROACH

The City's comprehensive master plan is a unique venture that requires a solid technical approach for each individual planning element, but also an awareness of the integration of different technical specialties and the ramifications of planning assumptions.

"Right Size" CIPs to Maintain Financial Sustainability

In coordination with the development of the individual master plan components of OneWater Morro Bay, there is the fundamental desire to answer "Who pays and how much?" This overarching concern is critical to the City's ability to not only identify the necessary capital needs, but to also fund them.

ASSESS An accurate assessment of your current infrastructure requires a comprehensive analysis of capacity and reliability.

- State-of-the-art hydraulic models set the foundation for identifying existing and future capacity constraints.
- Reliability is important in assessing existing assets, particularly for your desalination facility. Understanding the true cost of seawater desalination will determine its viability as a major component of the City's future supply.

STRATEGIZE Strategic planning optimizes the use of the City's water resources in a holistic manner.

- The recommendations of the Master Reclamation Plan will be evaluated against state water, groundwater, stormwater, and desalination options.
- Innovative blending options to mitigate groundwater quality issues will be considered along with the City's planned increase in storage capacity.
- Our hydraulic modelers will identify infrastructure necessary to implement future supply, sewer, and stormwater projects.

PRIORITIZE To prioritize projects with confidence, you need the final OneWater Plan to incorporate a rigorous methodology. Criteria include operational reliability, flexibility, risk minimization, cost-efficiency, and institutional/regulatory requirements. The criteria are weighted to develop a project score/priority. Carollo will work with the City to determine the appropriate decision methodology; one that is consistent with the WRF Master Plan and Master Reclamation Plan, and is acceptable to your community.

Carollo will work with the City to not only "Right Size" the identified projects, but also see that the impacts to the City's rate payers are financially sustainable. Without this critical step, the City's existing rate payers may ultimately be on the hook for supporting a program that is not feasible.

Making Flow Monitoring Work Within the Existing Project Schedule

In previous meetings with City staff, we have discussed the importance of wet weather flow monitoring to calibration of the sewer model and ultimately influencing the design criteria of the pump station. Due to the timing of the procurement for OneWater Morro Bay and the wet weather season, performing the flow monitoring as part of OneWater Morro Bay may be difficult. Per the current schedule, the selected consultant is slated to start work April 17, 2017. Allotting time following the start of work for finalizing the flow monitoring program, developing the subconsultant scope of work and agreement, and installation of flow meters in the field, puts the flow monitoring period in late April/early May when the chance of capturing a significant storm event is low. Postponing the flow monitoring to the end of 2017 is likely not a viable option since the offsite Improvements designer will be selected in April 2017.

To help expedite this process, we have evaluated your collection system and identified potential flow monitoring locations in this proposal, as shown in Figure 2 on the next page. Carollo recommends the City contract directly with a flow monitoring consultant such as V&A during the negotiations with the OneWater Morro Bay consultant. Immediately after being selected, Carollo could provide the City draft flow monitoring scopes and help facilitate contracting between the City and the flow monitoring consultant at no cost to the City. After starting work, Carollo would then work directly with the flow monitoring consultant to complete data acquisition and evaluation.

SCOPE OF WORK

Our approach to this project revolves around sound and proven planning principles and years of experience developing integrated projects just like OneWater Morro Bay. We have developed a summarized project scope of work that highlights the key elements of each task. Due to page limitations in this proposal, this scope of work is not intended to be a complete description and detailing of the tasks, but more a summary of the expected tasks.

The scope of work is also illustrated on the project work plan shown on page 21. The work plan highlights the key tasks, deliverables, and meetings associated with the tasks below. We look forward to working closely with you to further define the scope of work to suit your needs.

Task 1 – Project Management and Meetings.

This includes the management of the overall scope, schedule, and budget. It also includes coordination with City staff, deliverables, and quality management. This task will include time for the kick-off meeting, biweekly progress meetings, critical workshops that will focus on key decisions, as well as development and delivery of presentations to the public, Public Works Advisory Board, and the City Council.

Task 2 – Data Collection and Background Review.

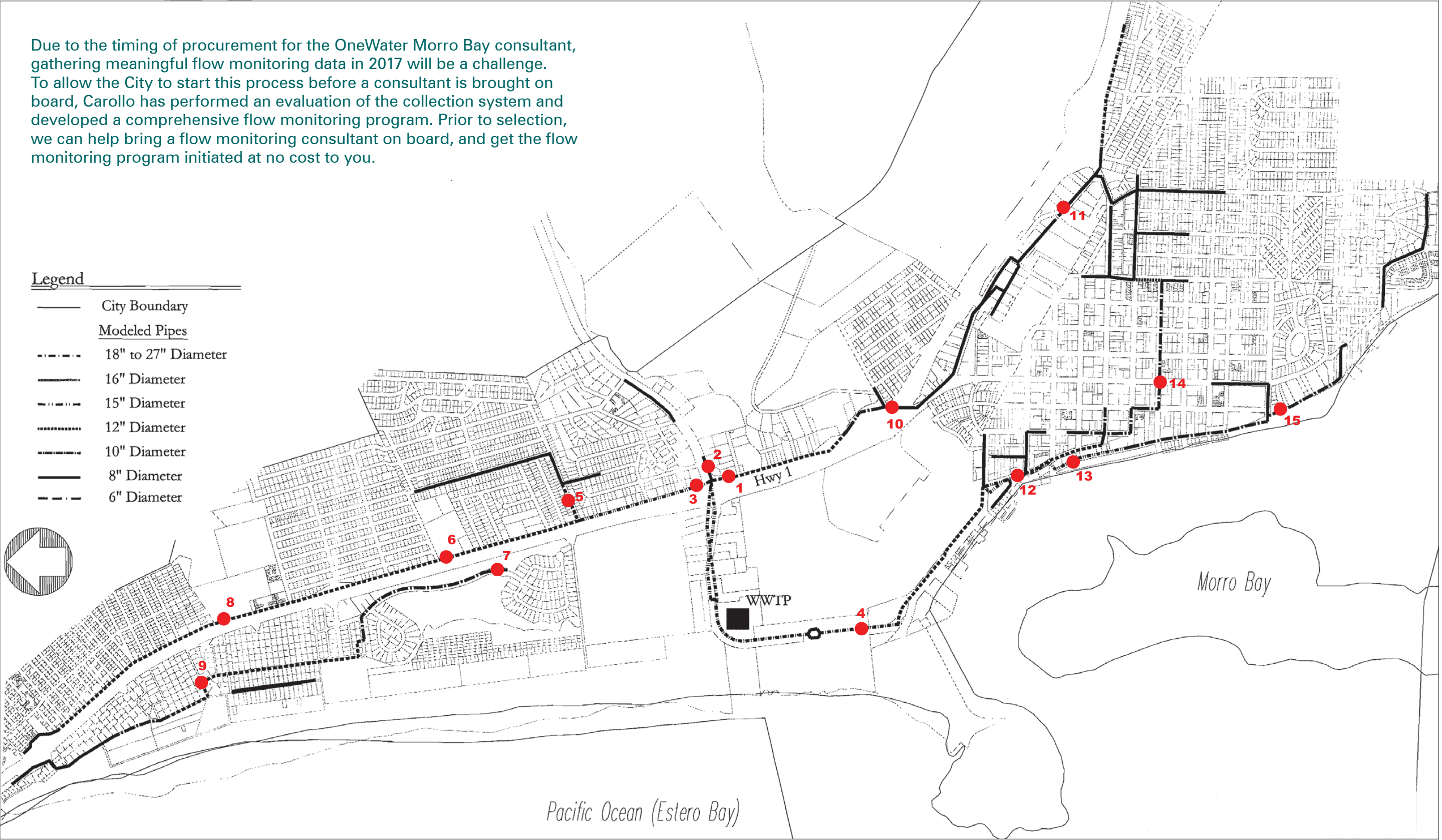
Carollo will develop a data collection matrix that details the required data, the responsible person, the priorities, as well as any additional notes that would be needed for the project. We have included an example of a data collection matrix on page 18 for you to develop an understanding of data needs.

Carollo will also work closely with the City to understand the work completed to date, as well as the decisions and policies that are currently in place that will partially guide the decision-making process.

Task 3 – Planning Data Analysis. Carollo will work closely with the City's planning department to develop a digital land use inventory. The land use inventory will form the basis for the water demand and wastewater flow projections. The General Plan Buildout land use will be the target for future water supply and wastewater generation needs, as well as the required stormwater drainage facilities. The General Plan Land Use street layouts, and development patterns will also guide the locations of future facilities, and any potential lands that could be used for conjunctive use.

Task 4 – Historical Water Demands and Wastewater Flows. Carollo will use historical water production, consumption, and state water usage data, along with influent flows at the wastewater treatment plant to develop water demand and wastewater production trends. The analysis will help determine the usage rates and overall trends that are expected moving forward. This analysis will also help define the water usage and wastewater generation rates per acre per each land use type, as well as any large industrial users.

FIGURE 2 - KICK-STARTING YOUR FLOW MONITORING PROGRAM





Data Collection List
Water, Wastewater, and Stormwater Master Plans Update
City of Morro Bay



Item No.	Master Plan Discipline	Item	Preferred Format	Received?	Date Received	Comments
1	General	General Plan	pdf			
2	General	2015 Urban Water Management Plan	pdf			
3	General	Most recent water, wastewater and storm drain master plans	pdf			
4	General	Known Development Information	any			
5	General	Any relevant specific plans	any			
6	General	GIS Data - Basemap Layers (Hydrography, topo/ground elevation contours, street centerlines, water and wastewater service area boundaries, parcels)	GIS			
7	General	GIS Data - Vacant Land	GIS			
8	General	GIS Data - Land Use/Zoning	GIS			
9	General	City Design Standards and Specifications	pdf			
10	SMP	Sewer System Management Plan	pdf			
11	SMP	Previous Wastewater Collection System Hydraulic model	--			
12	SMP	Historical Influent Flow Data at the WWTP (daily flows for past 5 years)	xls			
13	SMP	Historical Influent Flow Data at the WWTP (2016-present)	xls			
14	SMP	Industrial Flow Data for the Last 3 Years	xls			
15	SMP	GIS Data - Wastewater Collection System (pipelines, manholes, lift stations, lift station tributary areas, sewer interconnections)	GIS			
16	SMP	As-built or schematics: WWTP	pdf			
17	SMP	As-built or schematics: Lift stations	pdf			
18	SMP	Improvement plans or as-built for recent sewer projects or planned sewer projects that are not shown on the GIS	pdf			
19	SMP	Record Drawings - Pipe invert elevations and manhole rim elevations (as needed)	pdf			
20	SMP	Lift station pump curves	pdf			
21	SMP	Lift station operational control data (pump on/off levels) and maintenance records.	any			
22	SMP	Lift Station SCADA data (flow, pressure, wet well depth, pump run times, pump flow/speed, if recorded)	xls			
23	SMP	Any available CCTV data from the sewer system	varies			
24	SMP	Map of Hot Spots or Known Capacity Deficient Areas	pdf			
25	SMP	Historical SSO Locations	pdf			
26	SMP	Recent bid tabs for wastewater collection system projects (including pipeline and lift station projects)	xls			
27	SMP (WWTP)	Historical Influent Flow Data at the WWTP - Hourly (2012 to 2016)	xls			
28	SMP (WWTP)	Historical Influent Load Data at the WWTP - BOD, TSS, and TKN/NH ₃ (2012 to 2016)	xls			
29	SMP (WWTP)	Existing Operation and Maintenance Manuals	pdf			
30	SMP (WWTP)	Map Identifying City-Owned Property near the WWTP	pdf			
31	WMP	Previous Water System Hydraulic model	--			
32	WMP	SWP Supply Information and Deslination Plant Information	pdf			
33	WMP	Historical water supply/production data, by source, monthly for 2008-2016	xls			
34	WMP	Historical water supply/production data, daily for 2016	xls			
35	WMP	Historical total consumption/billing/demand data for entire system, annually for 2008 -	xls			
36	WMP	Water Billing Records by customer, monthly for 2015 and 2016 w/ address and/or APN and/or latitude and longitude	xls			
37	WMP	GIS Data - Water System (pipelines, valves, meter locations, pressure zone boundaries, wells, reservoirs, pump stations, water interconnections)	GIS			
38	WMP	Record Drawings - Groundwater Wells, Desalination Plant, SWP connection	pdf			
39	WMP	Record Drawings - Tanks	pdf			
40	WMP	Recent Well Tests/Current Well Capacity	pdf			
41	WMP	Operational controls for wells and any other valves	pdf			
42	WMP	Fire Flow requirements, based on land use	pdf			
43	WMP	Age/material information for distribution pipelines	pdf			
44	WMP	Historic main break locations	any			
45	WMP	Recent bid tabs for water system projects	any			
46	STRM	Map/GIS of Storm Drainage lines, sizes, service area boundary	GIS			
47	STRM	Plat Maps - with existing system information (size, material , etc.)	Map			
48	STRM	Record Drawings - Pipe invert elevations and manhole rim elevations	Map			
49	STRM	Previous Storm Drainage System Master Plan	pdf			
50	STRM	Improvement plans for recent storm drain projects that are not shown on the plat	Map			
51	STRM	Pump station/lift station flow metering data and physical characteristics (invert elevations, wet well size, pump capabilities, etc.)	pdf			
52	STRM	Recent unit costs for pipelines, pump station/lift stations, and detention/retention ponds construction costs	pdf			
53	STRM	FEMA Flood Plain Mapping	Map			
54	STRM	Design drawings and design report for pump stations	pdf			
55	STRM	Retention/Detention Basin Info. (Dimensions, Capacity, etc.)	pdf			
56	STRM	Storm Pump Maintenance Log	pdf			
57	STRM	Areas of persistent flooding	Map			
58	General	Other relevant documents/data	--			

Task 5 – Hydraulic and Hydrologic Modeling.

Carollo will use the City's existing GIS database to create computer models of the water distribution system, the wastewater collection system, and the stormwater system. The models will be calibrated to ensure accuracy based on a number of techniques. Carollo will install temporary pressure loggers in the water distribution system at strategic locations to measure the pressure variations in the distribution system. The water modeled will be calibrated to the measured data, as well as SCADA records and hydrant flushing results. The wastewater collection system model will be calibrated to the data collected as part of the temporary flow monitoring program that the City is conducting as a separate contract.

Task 6 – Flow Monitoring Data and I/I Mitigation Analysis.

Carollo will work with the City's contracted flow monitoring firm to collect and analyze the wet weather flow data collected as part of the temporary flow monitoring program. Carollo's will help identify areas of the system where I/I mitigation projects will provide the biggest value in terms of flow reduction to the water reclamation facility. Review of I/I hydrographs will help determine the types of I/I (inflow, infiltration, or combined I/I) entering the system and how best to further pinpoint sources and mitigation methods.

Task 7 – Planning and Design Criteria. One of the most critical tasks of the integrated planning effort is the development of the criteria that will be used to determine facility sizing, deficiencies, and required supply and storage volumes on the water side. Carollo will work closely with the City on the development of the criteria, with an understanding of the integrated approach and ultimate goals of the City's OneWater philosophy.

Task 8 – Determine Existing System Capacities.

Carollo will use the computer models, the planning and design criteria, and the baseline water and wastewater conditions to determine the current system capacity and performance. This analysis will form the foundation for the development of projects to mitigate existing deficiencies. It will also be the first point at which Carollo and the City will be able to evaluate current conditions and brainstorm concepts and programmatic changes to the overall operations of the City's water portfolio. This will

help to find integrated and sustainable solutions for the City's complete water picture, and to meet the objectives and overall goals established in the planning and criteria development of the overall project.

Task 9 – Develop Improvement and Future Service Project Portfolios.

Once the current conditions and baseline capacities are established, Carollo and the City will work together to analyze and develop the integrated projects that will allow the City to meet its objectives and serve future customers. This is the critical element of the project, as multiple alternatives and project portfolios will be developed that achieve the City's objectives. Carollo will develop the project portfolios based on a completely integrated OneWater approach and will include all the elements of the City's water resources portfolios. The alternatives will be discussed and vetted at a workshop with City staff and any other key stakeholders.

Task 10 – Develop Capital Improvement Program.

After the capital projects and programmatic changes have been accepted and vetted with staff and stakeholders (i.e., PWAB), Carollo will develop the capital program to serve the City over the next 20 years. Carollo will develop the project costs, project prioritization, and project implementation schedule. The Capital Improvement Program will be the key to the OneWater Plan.

Task 11 – Financial Sustainability. Carollo will create a financial model for water, sewer, and stormwater that meets the needs of City staff. As part of the model, various funding and rate alternatives will be evaluated. The model will be developed and rates determined to provide sufficient funding and increased financial resilience, while also maintaining financial sustainability for the City's ratepayers. For each of the three enterprises, rates will be designed to generate sufficient cash flow for O&M, R&R, and meet necessary funding and debt service obligations.

Task 12 – Project Deliverables. Carollo will develop the supporting documentation for every task, as well as 50 percent and 90 percent draft reports and presentations for public meetings. The deliverables include presentations for the Planning Commission, City Council, and PWAB.

PROJECT SCHEDULE

Carollo's preliminary project schedule for the OneWater Morro Bay project is shown below. We anticipate a project of this magnitude to take close to 12 months to complete. Some critical steps include the development of planning and design criteria, as well as the flow monitoring and I/I analysis. Task 6 is scheduled to occur early in the project to allow for input into the WRF pump station project. We also anticipate that the development of the Project Portfolios and the Capital Improvement Program may take several iterations to determine the best mix of projects to help the City meet its objectives. We are excited to talk more about the schedule with you and optimize a program that works for the City.

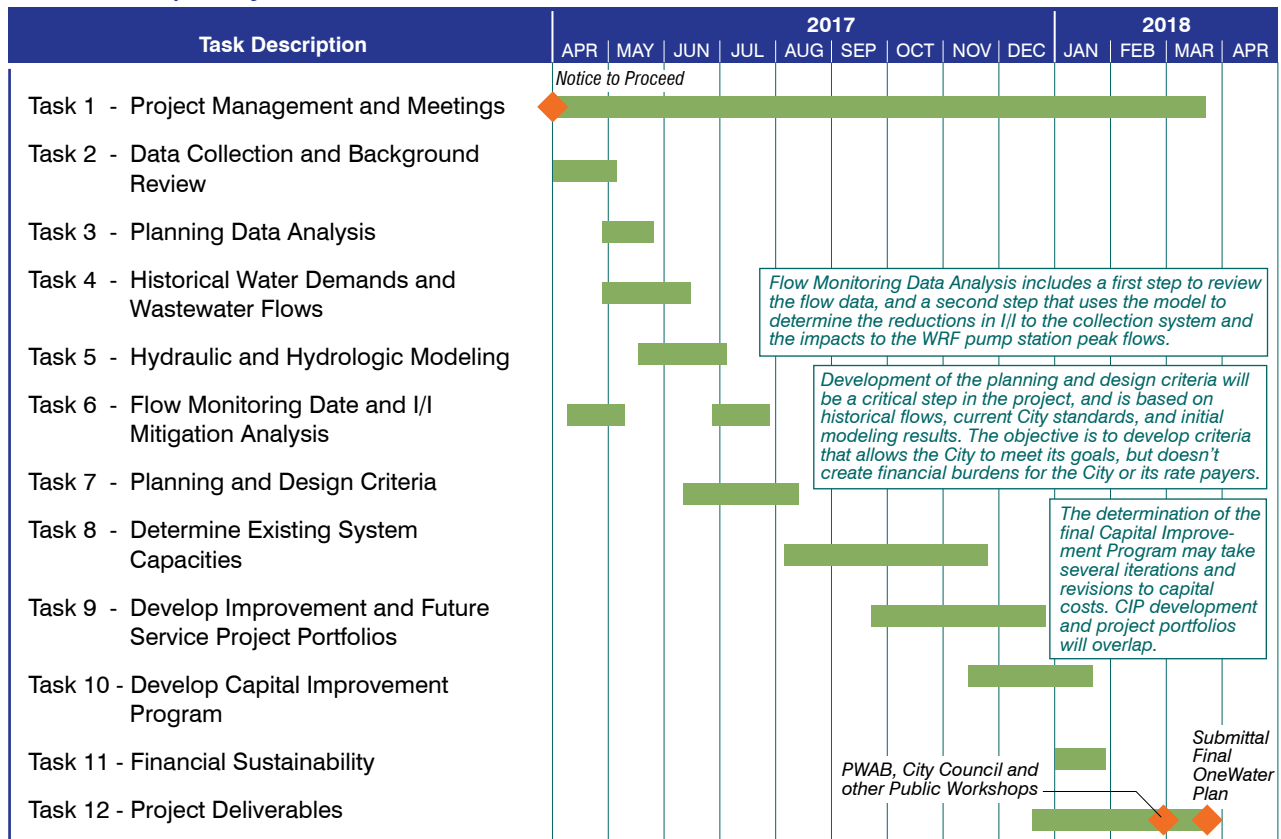
ESTIMATED LEVEL OF EFFORT AND FEES

Carollo developed the fee estimate shown on page 22 to complete the OneWater project. We estimate that we can complete the project for \$398,800. This does not include costs for flow monitoring. As you can see from the hour breakdown, we have allocated ample time for all of our experts to provide critical feedback related to water supply, project integration, desalination, hydrogeology, and storm-water capture. We have also included time for public workshops and the development of presentations for public meetings and council presentations.

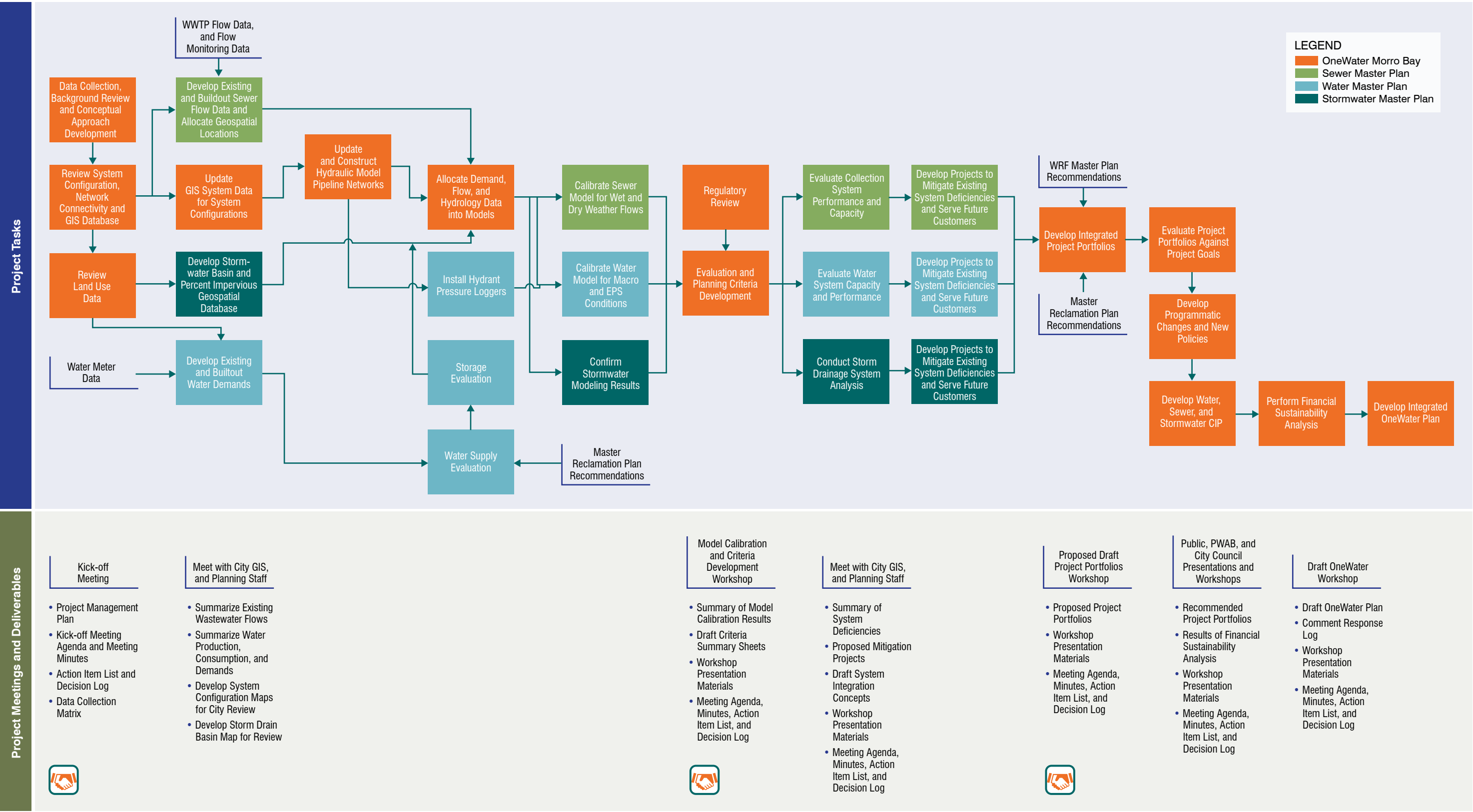
Our standard rate sheets are located at the end of the Qualifications section, as requested in the RFP.

We are more than happy to discuss the estimated fee and hours with you, should you have other ideas about how to structure the scope of work and associated fee.

Preliminary Project Schedule



Work Plan





City of Morro Bay – OneWater Fee Estimate

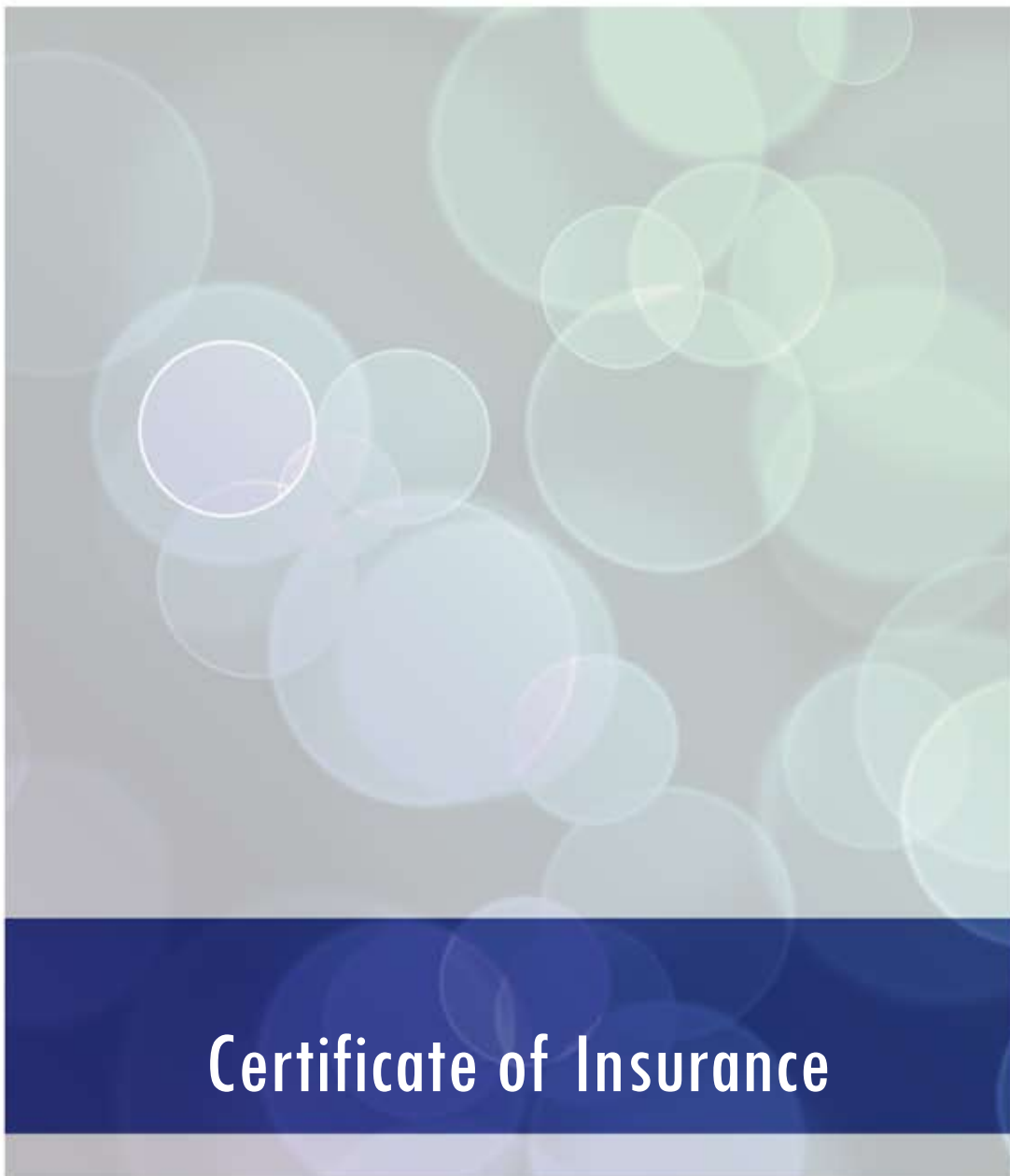
Task	Description	Project Manager Eric Casares	Project Engineer Tim Loper	Alternatives Analysis/WRF Integration Inge Wiersema	Alternative Supply Analysis Lydia Holmes	Stormwater Analysis Elisa Garvey	Hydraulic Modeling Ryan Orgill	Financial Sustainability Robb Grantham	Hydrogeology David Harkins	Desalination Tom Seacord	Staff Engineers	GIS Specialists	Document Processing	Total Hours	Labor	PECE	Printing/ Travel	Subs/ Direct Costs	Subs/ Direct Cost + 10%	Subs and Other Direct Expenses ⁽¹⁾	Estimated Fee
2017 Rates		\$252	\$252	\$252	\$252	\$243	\$205	\$252	\$252	\$252	\$168	\$176	\$111			\$ 11.70					
Task 1	Project Management and Meetings	48	24	8	8	4	16	4	4	8	24	24	32	124	\$ 30,500	\$ 2,387	\$ 5,000	\$ -	\$ -	\$ 7,400	\$ 37,900
Task 2	Data Collection and Background Review	4	16	4	4	4	12	0	4	4	24	2	2	80	\$ 12,500	\$ 936	\$ 100	\$ -	\$ -	\$ 1,000	\$ 13,500
Task 3	Planning Data Analysis	4	12	0	0	0	16	0	0	0	24	16	2	74	\$ 7,300	\$ 866	\$ -	\$ -	\$ -	\$ 900	\$ 8,200
Task 4	Historical Water Demands and Wastewater Flows	4	16	4	4	0	24	0	4	0	32	16	8	112	\$ 13,000	\$ 1,310	\$ -	\$ -	\$ -	\$ 1,300	\$ 14,300
Task 5	Hydraulic and Hydrologic Modeling	4	32	0	0	48	160	0	4	0	320	24	8	600	\$ 54,500	\$ 7,020	\$ -	\$ -	\$ -	\$ 7,000	\$ 61,500
Task 6	Flow Monitoring Data and I/I Mitigation Analysis	2	24	0	0	0	40	0	0	0	92	32	8	198	\$ 14,800	\$ 2,317	\$ -	\$ -	\$ -	\$ 2,300	\$ 17,100
Task 7	Planning and Design Criteria	4	12	8	12	16	32	0	4	4	32	4	2	130	\$ 21,500	\$ 1,521	\$ -	\$ -	\$ -	\$ 1,500	\$ 23,000
Task 8	Determine Existing System Capacities	8	32	8	24	16	120	0	8	24	210	12	4	466	\$ 54,700	\$ 5,452	\$ -	\$ -	\$ -	\$ 5,500	\$ 60,200
Task 9	Develop Improvement and Future Service Project Portfolios	16	32	24	32	24	66	0	16	16	140	32	24	422	\$ 53,600	\$ 4,937	\$ -	\$ -	\$ -	\$ 4,900	\$ 58,500
Task 10	Develop Capital Improvement Program	4	24	16	16	8	32	0	4	4	60	24	16	208	\$ 25,600	\$ 2,434	\$ -	\$ -	\$ -	\$ 2,400	\$ 28,000
Task 11	Financial Sustainability	2	16	4	0	0	0	60	0	0	120	12	8	222	\$ 20,700	\$ 2,597	\$ -	\$ -	\$ -	\$ 2,600	\$ 23,300
Task 12	Project Deliverables	16	32	24	24	24	60	4	4	4	180	32	24	428	\$ 45,300	\$ 5,008	\$ 3,000	\$ -	\$ -	\$ 8,000	\$ 53,300
Total Hours and Fee		116	272	100	124	144	578	68	52	64	1258	230	138	3064	\$ 354,000	\$ 36,785	\$ 8,100	\$ -	\$ -	\$ 44,800	\$ 398,800

Notes:

(1) Other direct expenses include mileage travelling to/from meetings at IRS Federal Rate, reproduction at cost plus 5%, and Project Equipment and Communication Expense billed at \$11.70 per hour.



Submittal Forms



Certificate of Insurance



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

2/10/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must have **ADDITIONAL INSURED** provisions or be endorsed. If **SUBROGATION** IS **WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Risk Strategies Company 2040 Main Street, Suite 450 Irvine, CA 92614 www.risk-strategies.com CA DOI License No. 0F06675	CONTACT NAME: Risk Strategies Company PHONE (A/C, No. Ext): 949-242-9240 E-MAIL ADDRESS: syoung@risk-strategies.com INSURER(S) AFFORDING COVERAGE INSURER A: Massachusetts Bay Insurance Company INSURER B: INSURER C: Continental Casualty Company INSURER D: INSURER E: INSURER F:	FAX (A/C, No): NAIC # 22306 20443
--	--	---

COVERAGES**CERTIFICATE NUMBER:** 34199054**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Deductible \$0 GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ZDF8944892	12/31/2016	12/31/2017	EACH OCCURRENCE \$ \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ \$1,000,000 MED EXP (Any one person) \$ \$25,000 PERSONAL & ADV INJURY \$ \$1,000,000 GENERAL AGGREGATE \$ \$2,000,000 PRODUCTS - COMP/OP AGG \$ \$2,000,000
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY		<input checked="" type="checkbox"/>	ADFA486963	12/31/2016	12/31/2017	COMBINED SINGLE LIMIT (Ea accident) \$ \$1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ Deductible: Comp/Coll \$ \$1,000
	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N <input checked="" type="checkbox"/> N	N/A	WDF8957499	12/31/2016	12/31/2017	<input checked="" type="checkbox"/> PER STATUTE <input checked="" type="checkbox"/> OTH-ER Deductible: \$0 E.L. EACH ACCIDENT \$ \$1,000,000 E.L. DISEASE - EA EMPLOYEE \$ \$1,000,000 E.L. DISEASE - POLICY LIMIT \$ \$1,000,000
C	Professional Liability Unlimited Prior Acts			AEH288354410	7/4/2016	7/4/2017	Each Claim: \$2,000,000 Aggregate: \$2,000,000 Deductible: \$25,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Projects as on file with the insured including but not limited to: Water Engineering & Planning Services "One Water" Morro Bay RFP. Carollo Project #: Not yet assigned. City of Morro Bay and its officials, employees and agents are included as additional insureds on a primary & non-contributory basis with respects to general liability. Waiver of subrogation is included with respects to General & Auto Liability.

CERTIFICATE HOLDER

City of Morro Bay
Attn: Public Works Director
595 Harbor St.
Morro Bay CA 93442

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Michael Christian

© 1988-2015 ACORD CORPORATION. All rights reserved.

ACORD 25 (2016/03)

The ACORD name and logo are registered marks of ACORD

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

COMMERCIAL GENERAL LIABILITY BROADENING ENDORSEMENT

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SUMMARY OF COVERAGES

1.	Additional Insured by Contract, Agreement or Permit	Included
2.	Additional Insured – Primary and Non-Contributory	Included
3.	Blanket Waiver of Subrogation	Included
4.	Bodily Injury Redefined	Included
5.	Broad Form Property Damage – Borrowed Equipment, Customers Goods & Use of Elevators	Included
6.	Knowledge of Occurrence	Included
7.	Liberalization Clause	Included
8.	Medical Payments – Extended Reporting Period	Included
9.	Newly Acquired or Formed Organizations - Covered until end of policy period	Included
10.	Non-owned Watercraft	51 ft.
11.	Supplementary Payments Increased Limits	
	- Bail Bonds	\$2,500
	- Loss of Earnings	\$1000
12.	Unintentional Failure to Disclose Hazards	Included
13.	Unintentional Failure to Notify	Included

This endorsement amends coverages provided under the Commercial General Liability Coverage Part through new coverages, higher limits and broader coverage grants.

1. Additional Insured by Contract, Agreement or Permit

The following is added to **SECTION II – WHO IS AN INSURED:**

Additional Insured by Contract, Agreement or Permit

- a. Any person or organization with whom you agreed in a written contract, written agreement or permit that such person or organization to add an additional insured on your policy is an additional insured only with respect to liability for “bodily injury”, “property damage”, or “personal and advertising injury” caused, in whole or in part, by your acts or omissions, or the acts or omissions of those acting on your behalf, but only with respect to:

- (1) "Your work" for the additional insured(s) designated in the contract, agreement or permit;

- (2) Premises you own, rent, lease or occupy; or

- (3) Your maintenance, operation or use of equipment leased to you.

- b. The insurance afforded to such additional insured described above:

- (1) Only applies to the extent permitted by law; and

- (2) Will not be broader than the insurance which you are required by the contract, agreement or permit to provide for such additional insured.

- (3) Applies on a primary basis if that is required by the written contract, written agreement or permit.
 - (4) Will not be broader than coverage provided to any other insured.
 - (5) Does not apply if the "bodily injury", "property damage" or "personal and advertising injury" is otherwise excluded from coverage under this Coverage Part, including any endorsements thereto.
- c. This provision does not apply:
- (1) Unless the written contract or written agreement was executed or permit was issued prior to the "bodily injury", "property damage", or "personal injury and advertising injury".
 - (2) To any person or organization included as an insured by another endorsement issued by us and made part of this Coverage Part.
 - (3) To any lessor of equipment:
 - (a) After the equipment lease expires; or
 - (b) If the "bodily injury", "property damage", "personal and advertising injury" arises out of sole negligence of the lessor
 - (4) To any:
 - (a) Owners or other interests from. whom land has been leased which takes place after the lease for the land expires; or
 - (b) Managers or lessors of premises if:
 - (i) The occurrence takes place after you cease to be a tenant in that premises; or
 - (ii) The "bodily injury", "property damage", "personal injury" or "advertising injury" arises out of structural alterations, new construction or demolition operations performed by or on behalf of the manager or lessor.
 - (5) To "bodily injury", "property damage" or "personal and advertising injury" arising out of the rendering of or the failure to render any professional services.
- This exclusion applies even if the claims against any insured allege negligence or other wrongdoing in the supervision, hiring, employment, training or monitoring of others by that insured, if the "occurrence" which caused the "bodily injury" or "property damage" or the offense which caused the "personal and

advertising injury" involved the rendering of or failure to render any professional services by or for you.

- d. With respect to the insurance afforded to these additional insureds, the following is added to **SECTION III – LIMITS OF INSURANCE**:

The most we will pay on behalf of the additional insured for a covered claim is the lesser of the amount of insurance:

- 1. Required by the contract, agreement or permit described in Paragraph a.; or
- 2. Available under the applicable Limits of Insurance shown in the Declarations.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

2. Additional Insured – Primary and Non-Contributory

The following is added to **SECTION IV – COMMERCIAL GENERAL LIABILITY CONDITIONS**, Paragraph 4. Other insurance:

Additional Insured – Primary and Non-Contributory

If you agree in a written contract, written agreement or permit that the insurance provided to any person or organization included as an Additional Insured under **SECTION II – WHO IS AN INSURED**, is primary and non-contributory, the following applies:

If other valid and collectible insurance is available to the Additional Insured for a loss covered under Coverages **A** or **B** of this Coverage Part, our obligations are limited as follows:

a. Primary Insurance

This insurance is primary to other insurance that is available to the Additional Insured which covers the

Additional Insured as a Named Insured. We will not seek contribution from any other insurance available to the Additional Insured except:

- (1) For the sole negligence of the Additional Insured;
- (2) When the Additional Insured is an Additional Insured under another primary liability policy; or
- (3) when b. below applies.

If this insurance is primary, our obligations are not affected unless any of the other insurance is also primary. Then, we will share with all that other insurance by the method described in c. below.

b. Excess Insurance

(1) This insurance is excess over any of the other insurance, whether primary, excess, contingent or on any other basis:

(a) That is Fire, Extended Coverage, Builder's Risk, Installation Risk or similar coverage for "your work";

(b) That is Fire insurance for premises rented to the Additional Insured or temporarily occupied by the Additional Insured with permission of the owner;

(c) That is insurance purchased by the Additional Insured to cover the Additional Insured's liability as a tenant for "property damage" to premises rented to the Additional Insured or temporarily occupied by the Additional with permission of the owner; or

(d) If the loss arises out of the maintenance or use of aircraft, "autos" or watercraft to the extent not subject to Exclusion **g.** of **SECTION I – COVERAGE A – BODILY INJURY AND PROPERTY DAMAGE LIABILITY.**

(2) When this insurance is excess, we will have no duty under Coverages **A** or **B** to defend the insured against any "suit" if any other insurer has a duty to defend the insured against that "suit". If no other insurer defends, we will undertake to do so, but we will be entitled to the insured's rights against all those other insurers.

(3) When this insurance is excess over other Insurance, we will pay only our share of the amount of the loss, if any, that exceeds the sum of:

(a) The total amount that all such other insurance would pay for the loss in the absence of this insurance; and

(b) The total of all deductible and self insured amounts under all that other insurance.

We will share the remaining loss, if any, with any other insurance that is not described in this Excess Insurance provision and was not bought specifically to apply in excess of the Limits of Insurance shown in the Declarations of this Coverage Part.

c. Method Of Sharing

If all of the other insurance permits contribution by equal shares, we will follow this method also. Under this approach each

insurer contributes equal amounts until it has paid its applicable limit of insurance or none of the loss remains, whichever comes first. If any of the other insurance does not permit contribution by equal shares, we will contribute by limits. Under this method, each insurer's share is based on the ratio of its applicable limit of insurance to the total applicable limits of insurance of all insurers

3. Blanket Waiver of Subrogation

The following is added to **SECTION IV – COMMERCIAL GENERAL LIABILITY CONDITIONS**, Paragraph **8. Transfer Of Rights Of Recovery Against Others To Us**:

We waive any right of recovery we may have against any person or organization with whom you have a written contract that requires such waiver because of payments we make for damage under this coverage form. The damage must arise out of your activities under a written contract with that person or organization. This waiver applies only to the extent that subrogation is waived under a written contract executed prior to the "occurrence" or offense giving rise to such payments.

4. Bodily Injury Redefined

SECTION V – DEFINITIONS, Definition **3.** "bodily injury" is replaced by the following:

3. "Bodily injury" means bodily injury, sickness or disease sustained by a person including death resulting from any of these at any time. "Bodily injury" includes mental anguish or other mental injury resulting from "bodily injury".

5. Broad Form Property Damage – Borrowed Equipment, Customers Goods, Use of Elevators

a. SECTION I – COVERAGES, COVERAGE A – BODILY INJURY AND PROPERTY DAMAGE LIABILITY, Paragraph **2. Exclusions** subparagraph **j.** is amended as follows:

Paragraph **(4)** does not apply to "property damage" to borrowed equipment while at a jobsite and not being used to perform operations.

Paragraphs **(3)**, **(4)** and **(6)** do not apply to "property damage" to "customers goods" while on your premises nor do they apply to the use of elevators at premises you own, rent, lease or occupy.

b. The following is added to **SECTION V – DEFINITIONS**:

24. "Customers goods" means property of your customer on your premises for the purpose of being:

- a. worked on; or
- b. used in your manufacturing process.
- c. The insurance afforded under this provision is excess over any other valid and collectible property insurance (including deductible) available to the insured whether primary, excess, contingent

6. Knowledge of Occurrence

The following is added to **SECTION IV – COMMERCIAL GENERAL LIABILITY CONDITIONS**, Paragraph 2. **Duties in the Event of Occurrence, Offense, Claim or Suit:**

- e. Notice of an "occurrence", offense, claim or "suit" will be considered knowledge of the insured if reported to an individual named insured, partner, executive officer or an "employee" designated by you to give us such a notice.

7. Liberalization Clause

The following is added to **SECTION IV – COMMERCIAL GENERAL LIABILITY CONDITIONS:**

Liberalization Clause

If we adopt any revision that would broaden the coverage under this Coverage Form without additional premium, within 45 days prior to or during the policy period, the broadened coverage will immediately apply to this Coverage Part.

8. Medical Payments – Extended Reporting Period

- a. **SECTION I – COVERAGES, COVERAGE C – MEDICAL PAYMENTS**, Paragraph 1. **Insuring Agreement**, subparagraph a.(3)(b) is replaced by the following:
 - (b) The expenses are incurred and reported to us within three years of the date of the accident; and
- b. This coverage does not apply if **COVERAGE C – MEDICAL PAYMENTS** is excluded either by the provisions of the Coverage Part or by endorsement.

9. Newly Acquired Or Formed Organizations

SECTION II – WHO IS AN INSURED, Paragraph 3.a. is replaced by the following:

- a. Coverage under this provision is afforded until the end of the policy period.

10. Non-Owned Watercraft

SECTION I – COVERAGES, COVERAGE A BODILY INJURY AND PROPERTY DAMAGE LIABILITY, Paragraph 2. **Exclusions**, subparagraph g.(2) is replaced by the following:

g. Aircraft, Auto Or Watercraft

(2) A watercraft you do not own that is:

- (a) Less than 51 feet long; and
- (b) Not being used to carry persons or property for a charge;

This provision applies to any person who, with your consent, either uses or is responsible for the use of a watercraft.

11. Supplementary Payments Increased Limits

SECTION I – SUPPLEMENTARY PAYMENTS COVERAGES A AND B, Paragraphs 1.b. and 1.d. are replaced by the following:

- 1.b. Up to \$2,500 for cost of bail bonds required because of accidents or traffic law violations arising out of the use of any vehicle to which the Bodily Injury Liability Coverage applies. We do not have to furnish these bonds.
- 1.d. All reasonable expenses incurred by the insured at our request to assist us in the investigation or defense of the claim or "suit", including actual loss of earnings up to \$1000 a day because of time off from work.

12. Unintentional Failure to Disclose Hazards

The following is added to **SECTION IV – COMMERCIAL GENERAL LIABILITY CONDITIONS**, Paragraph 6. **Representations:**

We will not disclaim coverage under this Coverage Part if you fail to disclose all hazards existing as of the inception date of the policy provided such failure is not intentional.

13. Unintentional Failure to Notify

The following is added to **SECTION IV – COMMERCIAL GENERAL LIABILITY CONDITIONS**, Paragraph 2. **Duties in the Event of Occurrence, Offense, Claim or Suit:**

Your rights afforded under this policy shall not be prejudiced if you fail to give us notice of an "occurrence", offense, claim or "suit", solely due to your reasonable and documented belief that the "bodily injury" or "property damage" is not covered under this policy.

ALL OTHER TERMS, CONDITIONS, AND EXCLUSIONS REMAIN UNCHANGED.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s)	Location(s) Of Covered Operations
	As required by a written contract.
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

A. Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

- C. With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**BUSINESS AUTO COVERAGE
BROADENING ENDORSEMENT**

This endorsement modifies insurance provided under the following:

BUSINESS AUTO COVERAGE FORM

With respect to coverage provided by this endorsement, the provisions of the Coverage Form apply unless modified by the endorsement.

1. CANCELLATION EXTENSION

Paragraph **A. CANCELLATION 2. b.** of the **COMMON POLICY CONDITIONS** is replaced with the following:

- b. 60 days before the effective date of cancellation if we cancel for any other reason.

- d. Any business entity for which you have a financial interest greater than 50% of the voting stock or otherwise have a controlling interest after the effective date of this policy or that is newly acquired or formed by you during the term of this policy.

SECTION I - COVERED AUTOS

- 2. EMPLOYEE HIRED "AUTOS"**
Description Of Covered Auto Designation Symbols; Symbol 8 is replaced by the following:

8 = Hired "Autos" Only - Only those "autos" you lease, hire, rent or borrow; including "autos" your employee hires at your direction, for the purpose of conducting your business. This does not include any "auto" you lease, hire, rent, or borrow from any of your "employees" or partners or members of their households.

The coverage provided by this provision is afforded until expiration or termination of this policy, whichever occurs earlier.

The coverage provided by this provision does not apply to any business entity described in d. above that qualifies as an insured under any other automobile liability policy issued to that business entity as a named insured or would have been an insured except for the exhaustion of the policy limits or the insolvency of the insurer.

SECTION II - LIABILITY COVERAGE

3. BROADENED NAMED INSURED

The following is added to the **SECTION II - LIABILITY COVERAGE**, Paragraph 1. **Who Is An Insured** provision:

The coverage provided by this provision does not apply to "bodily injury" nor "property damage" arising from an accident that occurred prior to your acquiring or forming the business entity described in d. above.

Includes copyrighted material of Insurance Services Office, Inc. with its permission,
Copyright, Insurance Services Office, Inc., 1996

461-0155 (9-97)

4. EMPLOYEES AS INSURED

The following is added to the **SECTION II - LIABILITY COVERAGE**, Paragraph 1. **Who Is An Insured** provision:

- e. Any employee of yours is an "insured" while using a covered "auto" you do not own, hire or borrow in your business or your personal affairs.

5. SUPPLEMENTARY PAYMENTS

The following amends **SECTION II - LIABILITY COVERAGE**, Paragraph 2. **Coverage Extensions** provision:

Paragraph (2) is replaced by the following:

- (2) Up to \$2500 for cost of bail bonds (including bonds for related traffic law violations) required because of an "accident" we cover. We do not have to furnish these bonds.

Paragraph (4) is replaced by the following:

- (4) All reasonable expenses incurred by the "insured" at our request, including actual loss of earnings up to \$500 a day because of time off from work.

6. AMENDED FELLOW EMPLOYEE EXCLUSION

The following is added to the **SECTION II - LIABILITY COVERAGE, B. Exclusions** Paragraph 5. **Fellow Employee** exclusion:

This exclusion does not apply if the "bodily injury" arises from the use of a covered "auto" you own or hire. This coverage is excess over any other collectible insurance

SECTION III - PHYSICAL DAMAGE COVERAGE.

7. EXPENSE OF RETURNING A STOLEN "AUTO" and SIGN COVERAGE

The following is added to **SECTION III - PHYSICAL DAMAGE COVERAGE, A.1. COVERAGE:**

d. Expense Of Returning A Stolen "Auto"

We will pay for the expense of returning a covered "auto" to you.

e. Sign Coverage

We will pay for loss to signs, murals, paintings or graphics, as part of equipment, which are displayed on a covered "auto".

The most we will pay for "loss" in any one "accident" is the lesser of:

1. The actual cash value of the property as of the time of the "loss"; or
2. The cost of repairing or replacing the damaged or stolen property with other property of like kind and quality; or
3. \$2,000.

8. GLASS BREAKAGE DEDUCTIBLE

The following is added to **SECTION III- PHYSICAL DAMAGE COVERAGE A. COVERAGE** paragraph 3. **Glass Breakage - Hitting a Bird or Animal - Falling Objects or Missiles:**

Any deductible shown in the Declarations as applicable to the

covered "auto" will not apply to glass breakage if such glass is repaired, rather than replaced.

9. TRANSPORTATION EXPENSE

Paragraph 4. **Coverage Extension.** of **SECTION III - PHYSICAL DAMAGE COVERAGE, A. COVERAGE** is replaced with the following:

4. Coverage Extension

We will pay up to \$50 per day to a maximum of \$1500 for temporary transportation expense incurred by you because of the total theft of a covered "auto" of the private passenger type. We will pay only for those covered "autos" for which you carry either Comprehensive or Specified Causes of Loss Coverage. We will pay for temporary transportation expenses incurred during the period beginning 24 hours after the theft and ending, regardless of the policy's expiration, when the covered "auto" is returned to use or we pay for its "loss".

10. HIRED AUTO PHYSICAL DAMAGE

The following is added to **SECTION III - PHYSICAL DAMAGE COVERAGE, A. COVERAGE**:

5. Hired Auto Physical Damage

If hired "autos" are covered "autos" for Liability Coverage and if Physical Damage Coverage of Comprehensive, Specified Causes of Loss, or Collision is provided under this Coverage Form for any "auto" you own, then the Physical Damage Coverage(s) provided is extended to "autos" you hire without a driver or your employee hires, without a driver, at your

direction, for the purpose of conducting your business, for a period of 30 days or less, of like kind and use as the "autos" you own, subject to the following:

The most we will pay for any one loss is the lesser of the following:

- a. \$50,000 per accident, or
- b. cash value, or
- c. the cost of repair,

minus the deductible equal to the lowest deductible applicable to any owned "auto" for that coverage. Any deductible shown in the Declarations does not apply to "loss" caused by fire or lightning. Subject to the limit and deductible stated above, we will provide coverage equal to the broadest coverage provided to any covered "auto" you own, that is applicable to the loss.

If the loss arises from an accident for which you are legally liable and the lessor incurs an actual financial loss from that accident, we will cover the lessor's actual financial loss of use of the hired "auto" for a period of up to seven consecutive days from the date of the accident, subject to a limit of \$1,000 per accident.

11. AUDIO, VISUAL AND DATA ELECTRONIC EQUIPMENT COVERAGE

The following is added to **SECTION III - PHYSICAL DAMAGE COVERAGE, A. COVERAGE**:

6. Audio, Visual and Data Electronic Equipment Coverage

We will pay for "loss" to any electronic equipment that receives

Includes copyrighted material of Insurance Services Office, Inc. with its permission.
Copyright, Insurance Services Office, Inc., 1996

461-0155 (9-97)

or transmits audio, visual or data signals and that is not designed solely for the reproduction of sound. This coverage applies only if the equipment is permanently installed in the covered "auto" at the time of the "loss" or the equipment is removable from a housing unit which is permanently installed in the covered "auto" at the time of the "loss", and such equipment is designed to be solely operated by use of the power from the "auto's" electrical system, in or upon the covered "auto", including its antennas and other accessories. However, this does not include tapes, records or discs.

The exclusions that apply to PHYSICAL DAMAGE COVERAGE, except for the exclusion relating to Audio, Visual and Data Electronic Equipment, also apply to coverage provided herein. In addition, the following exclusions apply:

We will not pay, under this coverage, for either any electronic equipment or accessories used with such electronic equipment that is:

1. Necessary for the normal operation of the covered "auto" or the monitoring of the covered "auto's" operating system; or
2. Both:
 - a. An integral part of the same unit housing any sound reproducing equipment designed solely for the reproduction of sound if the sound reproducing equipment is permanently installed in the covered "auto", and

- b. Permanently installed in the opening of the dash or console normally used by the manufacturer for the installation of a radio.

With respect to coverage herein, the **LIMIT OF INSURANCE** provision of **PHYSICAL DAMAGE COVERAGE** is replaced by the following:

1. The most we will pay for all "loss" to audio, visual or data electronic equipment and any accessories used with this equipment as a result of any one "accident" is the lesser of
 - a. The actual cash value of the damaged or stolen property as of the time of the "loss"; or
 - b. The cost of repairing or replacing the damaged or stolen property with other property of like kind and quality; or
 - c. \$500.
2. An adjustment for depreciation and physical condition will be made in determining actual cash value at the time of the "loss".
3. Deductibles applicable to **PHYSICAL DAMAGE COVERAGE**, do not apply to this Audio, Visual and Data Electronic Equipment Coverage.

If there is other coverage provided by this policy for audio, visual and data electronic equipment, the coverage provided herein is

Includes copyrighted material of Insurance Services Office, Inc. with its permission.
Copyright, Insurance Services Office, Inc., 1996

461-0155 (9-97)

excess. However, you may elect to apply the limit or any portion thereof of coverage provided herein to pay any deductible that is applicable under the provisions of the other coverage.

12. RENTAL REIMBURSEMENT and MATERIAL TRANSFER EXPENSE

The following is added to **SECTION III - PHYSICAL DAMAGE COVERAGE, A. COVERAGE:**

7. Rental Reimbursement and Material Transfer Expense

This coverage provides only those Physical Damage Coverages where a premium is shown in the Declarations. It applies only to a covered "auto" described or designated to which the Physical Damage Coverages apply.

We will pay for auto rental expenses and the expenses, incurred by you because of "loss" to a covered "auto", to remove and transfer your materials and equipment from the covered "auto". Payment applies in addition to the otherwise applicable amount of each coverage you have on a covered "auto". No deductibles apply to this coverage.

We will pay only for those auto rental expenses incurred during the policy period beginning 24 hours after the "loss" and ending, regardless of the policy's expiration, with the lesser of the following number of days:

1. The number of days reasonably required to repair or replace the

covered "auto". If "loss" is caused by theft, this number of days is added to the number of days it takes to locate the covered "auto" and transport it to a repair shop.

2. 60 days.

Our payment is limited to the lesser of the following amounts:

1. Necessary and actual expenses incurred, including loss of use.
2. \$3000.

This auto rental expense coverage does not apply while there are spare or reserve "autos" available to you for your operations.

If "loss" results from the total theft of a covered "auto" of the private passenger type, we will pay under this coverage only that amount of your rental reimbursement expenses which is not already provided for under the **SECTION III - PHYSICAL DAMAGE COVERAGE, A. 4. Coverage Extension.**

13. AIRBAG COVERAGE

The following is added to **SECTION III - PHYSICAL DAMAGE COVERAGE, B. Exclusions**, paragraph 3.

The portion of this exclusion relating to mechanical or electrical breakdown does not apply to the accidental discharge of an airbag. This coverage is excess of other collectible insurance or warranty. No deductible applies to this Airbag Coverage.

Includes copyrighted material of Insurance Services Office, Inc. with its permission.
Copyright, Insurance Services Office, Inc., 1996

461-0155 (9-97)

14. AUTO LOAN PHYSICAL DAMAGE EXTENSION

The following is added to **SECTION III - PHYSICAL DAMAGE COVERAGE, C. Limit Of Insurance** provision:

When a "loss" results in a total loss to a covered auto you own for which a Loss Payee is designated in this policy, the most we will pay for "loss" in any one "accident" is the greater of:

1. The actual cash value of the damaged or stolen property as of the time of the "loss"; or
2. The outstanding balance of the initial loan, less any amounts for taxes, overdue payments, overdue payment charges, penalties, interest, any charges for early termination of the loan, costs for Credit Life Insurance, Health, Accident or Disability Insurance purchased with the loan, and carry-over balances from previous loans.

15. AUTO LEASE PHYSICAL DAMAGE EXTENSION

The following is added to **SECTION III - PHYSICAL DAMAGE COVERAGE, C. Limit Of Insurance** provision:

If, because of damage, destruction or theft of a covered "auto", which is a long-term leased "auto", the lease agreement between you and the lessor is terminated, "we" will pay the difference between the amount paid under paragraph **C. LIMIT OF INSURANCE 1. or 2.** and the amount due at the time of "loss" under the terms of the lease agreement applicable to the leased "auto" which you are required to pay: less any fees to dispose of the auto; any overdue payments; financial penalties

imposed under a lease for excessive use, abnormal wear and tear or high mileage; security deposits not refunded by the lessor; cost for extended warranties, Credit Life Insurance, Health, Accident or Disability Insurance purchased with the loan; and carry over balances from previous leases.

This coverage applies only to the initial lease for the covered "auto" which has not previously been leased. This coverage is excess over all other collectible insurance.

SECTION IV - CONDITIONS

16. DUTIES IN THE EVENT OF ACCIDENT, CLAIM, SUIT OR LOSS

The following is added to **SECTION IV - BUSINESS AUTO CONDITIONS, A. Loss Conditions, 2. Duties In The Event Of Accident, Claim, Suit Or Loss**:

- d. Knowledge of any "accident", claim, "suit" or "loss" will be deemed knowledge by you when notice of such "accident", claim, "suit" or "loss" has been received by:
 - (1) You, if you are an individual;
 - (2) Any partner or insurance manager if you are a partnership; or
 - (3) An executive officer or insurance manager if you are a corporation.

17. BLANKET WAIVER OF SUBROGATION

Paragraph 5. Transfer Of Rights Of Recovery Against Others To Us, **SECTION IV - BUSINESS AUTO CONDITIONS, A. Loss Conditions** is replaced by the following:

Includes copyrighted material of Insurance Services Office, Inc. with its permission.
Copyright, Insurance Services Office, Inc., 1996

461-0155 (9-97)

**5. Transfer Of Rights Of Recovery
Against Others To Us**

If any person or organization to or for whom we make payment under this Coverage Form has rights to recover damages from another, which have not been waived through the execution of an "insured contract", written agreement, or permit, prior to the "accident" or "loss" giving rise to the payment, those rights to recover damages from another are transferred to us. That person or organization must do everything necessary to secure our rights and must do nothing after the "accident" or "loss" to impair them.

**18. UNINTENTIONAL FAILURE TO
DISCLOSE INFORMATION**

The following is added to **SECTION IV BUSINESS AUTO CONDITIONS. B. General Conditions**, paragraph 2. **Concealment, Misrepresentation Or Fraud**:

Your unintentional error in disclosing, or failure to disclose, any material fact existing after the effective date of this Coverage Form shall not prejudice your rights under this Coverage Form. However, this provision does not affect our right to collect additional premium or exercise our right of cancellation or nonrenewal.

**19. HIRED AUTO - WORLDWIDE
COVERAGE**

The following is added to **SECTION IV - Business Auto Conditions, B. General Conditions**, paragraph 7. **Policy Period, Coverage Territory** provision:

- e. Outside the coverage territory described in a., b., c., and d. above for an "accident" or "loss" resulting from the use of a covered "auto" you hire, without a driver, or your employee hires without a driver, at your direction, for the purpose of conducting your business, for a period of 30 days or less, provided the suit is brought within The United States of America or its territories or possessions.

SECTION V - DEFINITIONS

20. MENTAL ANGUISH

Paragraph **C. "Bodily injury"**, **SECTION V - DEFINITIONS** is replaced by the following:

- C. "Bodily injury" means bodily injury, sickness or disease sustained by a person including death or mental anguish resulting from any of these.

Includes copyrighted material of Insurance Services Office, Inc. with its permission.
Copyright, Insurance Services Office, Inc., 1996

461-0155 (9-97)

WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE POLICY

WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT – CA

This endorsement changes the policy to which it is attached effective on the inception date of the policy unless otherwise stated.

This endorsement effective on 12/31/2016 at 12:01 am standard times forms a part of Policy No. WDF8957499

of the Massachusetts Bay Insurance Company

issued to: Carollo Engineers, Inc.

Premium (if any) \$



Authorized Representative

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us)

You must maintain payroll records accurately segregating the remuneration of your employees while engaged in the work described in the Schedule.

The additional premium for this endorsement shall be 2.000% of the California workers' compensation premium otherwise due on such remuneration.

Schedule

Person or Organization

ANY PERSON OR ORGANIZATION WITH WHOM YOU AGREE IN WRITING TO WAIVE YOUR RIGHT TO RECOVER AGAINST THEM. YOU MUST AGREE TO THIS WAIVER PRIOR TO THE DATE OF LOSS

Job Description: Projects as on file with the insured

WC 252 040 84



Subconsultant Listing

PROPOSAL SUBMITTAL FORM: SUB-CONSULTANT LISTING

Describe briefly the work scope of each sub-consultant. Attach additional pages if required.

Sub-consultant

Company Name	V&A Consulting Engineers, Inc.
Contact Individual	Kevin Krajewski, P.E.
Telephone & FAX number	510-903-6600, FAX: 510-903-6601
Street Address	1000 Broadway, Suite 320
City, State, Zip Code	Oakland, CA 94607
Description of services to be provided.	Flow monitoring

Sub-consultant

Company Name	
Contact Individual	
Telephone & FAX number	
Street Address	
City, State, Zip Code	
Description of services to be provided	

Sub-consultant

Company Name	
Contact Individual	
Telephone & FAX number	
Street Address	
City, State, Zip Code	
Description of services to be provided	



References

REFERENCES

Number of years engaged in providing the services included within the scope of the consultant services under the present business name: **7 Years as Carollo Engineers, Inc. (84 Years Total*)**

**Carollo was established in Phoenix, Arizona, in 1933 as Headman, Ferguson and Carollo and was renamed John A. Carollo, Consulting Engineers in 1957. The partnership was reorganized in 1970 under the name of John Carollo Engineers, and was renamed Carollo Engineers in 1996. The firm was incorporated in 1998 under the name of Carollo Engineers, P.C. The firm then converted from an Arizona professional corporation to a Delaware corporation under the name of Carollo Engineers, Inc. on May 13, 2010.*

Describe fully the last three contracts performed by your firm that demonstrate your ability to provide the services included with the scope of the consultant services. Attach additional pages if required. The City reserve the right to contact each of the references listed for additional information regarding your firm's qualifications.

Reference No. 1

Customer Name	City of Oceanside, California
Contact Individual	Jason Dafforn, Former Oceanside Water Utilities Manager
Telephone & FAX number	Telephone: 951-674-3146 / FAX: 951-674-7554
Street Address	Elsinore Valley Municipal Water District 31315 Chaney Street
City, State, Zip Code	Lake Elsinore, CA 92531
Description of services provided including contract amount, when provided and project outcome	<p>Title: Integrated Master Plans</p> <p>Services Provided: Carollo prepared the City of Oceanside's Water, Sewer, and Recycled Water Master Plans to account for land use changes, recent facility upgrades, new population projections, changes in the federal, state, and local regulatory environment, a recently completed needs assessment and structural analysis, and to also include proposed updates, improvements, and expansions to the water and sewer systems and facilities.</p> <p>Contract Amount: \$1.2 million</p> <p>Start Date: 2013 Completion Date: 2015</p> <p>Project Outcome: Delivery of master plan updates consisting of four major components that needed to be integrated into a comprehensive CIP. The CIP was used to develop a new financial plan.</p>

REFERENCES

Reference No. 2

Customer Name	City of Oxnard, California
Contact Individual	Daniel Rydberg, Public Works Director
Telephone & FAX number	Telephone: 805-385-8055 / FAX: 805-385-7806
Street Address	305 West Third Street
City, State, Zip Code	Oxnard, CA 93030
Description of services provided including contract amount, when provided and project outcome	<p>Title: Public Works Integrated Master Plan</p> <p>Services Provided: Carollo prepared the City of Oxnard's Public Works Integrated Master Plan, which included developing master plans for water, wastewater, stormwater, and recycled water. Asset condition, system modeling, and capacity evaluations were performed for all systems.</p> <p>Contract Amount: \$2.8 million</p> <p>Start Date: 2014 Completion Date: 2016</p> <p>Project Outcome: The result of the project was the development of a comprehensive CIP to prioritize expenditures across all service lines.</p>

Reference No. 3

Customer Name	City of Los Angeles, California
Contact Individual	Ali Poosti, Principal Civil Engineer
Telephone & FAX number	Telephone: 323-342-6228 / FAX: 323-342-6210
Street Address	2714 Media Center Drive
City, State, Zip Code	Los Angeles, CA 90065
Description of services provided including contract amount, when provided and project outcome	<p>Title: One Water LA 2040 Plan</p> <p>Services Provided: Carollo is leading a team of 20+ subconsultants and working in close collaboration with the City to prepare the One Water 2040 Plan and Programmatic Environmental Impact Report.</p> <p>Contract Amount: \$5.7 million</p> <p>Start Date: 2016 Completion Date: 2017</p> <p>Project Outcome: The Plan will ultimately guide the City with strategic and multi-billion dollar decisions for water infrastructure projects that will make LA a more water resilient and sustainable City.</p>



Statement of Past Contract Disqualifications

STATEMENT OF PAST CONTRACT DISQUALIFICATIONS

The Consultant shall state whether it or any of its officers or employees who have a proprietary interest in it, has ever been disqualified, removed, or otherwise prevented from proposing on, or completing a federal, state, or local government project because of the violation of law, a safety regulation, or for any other reason, including but not limited to financial difficulties, project delays, or disputes regarding work or product quality, and if so to explain the circumstances.

- ***Do you have any disqualification as described in the above paragraph to declare?***

Yes ☐

No ☒

- ***If Yes, explain the circumstances.***

Executed on 2/24/2017 at Fresno, CA under penalty of perjury of the laws of the State of California, that the foregoing is true and correct.



Signature of Authorized Consultant Representative



Appendix



Resumes

Eric T. Casares

Education

MS Civil and Environmental Engineering, California Polytechnic State University, San Luis Obispo, 2006

BS Biology, Stanford University, 2002

Licenses

Civil Engineer, California

Professional Affiliations

American Society of Civil Engineers

California Water Environment Association - Central San Joaquin Section (Officer)

Water Environment Federation - Residuals and Biosolids Subcommittee Member

Mr. Casares' experience includes environmental engineering, microbiology, and biochemistry. He has extensive experience in wastewater treatment facilities planning and design, with an emphasis on biosolids treatment, handling, and disposal. His recent project experience includes:

- Project engineer for the City of Morro Bay/Cayucos Sanitary District, California Wastewater Treatment Facilities Master Plan. Responsibilities included analysis of current and future regulatory requirements, analysis of future population and service connections, analysis of future flows and loadings, development of secondary and tertiary treatment alternatives, and development of biosolids management alternatives. Among these biosolids alternatives was composting. As part of the Facilities Master Plan, he also prepared an analysis of the RWQCB's current and future discharge requirements.
- Project manager for the City of Morro Bay, California Men's Colony Wastewater Treatment Plant Capacity Evaluation.
- Project manager for the Cambria Community Services District Enhanced Compliance Action Plan Report and Ten Percent Design. Effort included evaluation of improvements to the 1.0 mgd wastewater treatment facility, which includes influent and effluent flow equalization, preliminary treatment including macerators and aerated grit removal, secondary treatment with extended aeration technology and secondary clarifiers, a RAS/WAS pump station, aerobic digesters, and a rotary drum thickener/screw press for sludge dewatering.
- Project manager for the City of King City, CA, WWTP and Collection System Master Plans.
- Project engineer for the Mariposa, California Wastewater Treatment Plant Master Plan. Responsibilities for the Master Plan included preparation of the report as well as cost estimates for several treatment alternatives. Tasks also included assisting

the District with the development of a schedule for implementation of upgrades to meet new effluent requirements for metals, filtration, and nitrogen removal identified by the RWQCB as part of the new NPDES permit.

- Project manager for preliminary design of the City of Pismo Beach, CA, Regional Groundwater Sustainability project (indirect potable reuse).
- Project engineer for the City of Visalia, California Water Conservation Plant 2008 Master Plan. Responsibilities for this project included assisting the City in meeting the RWQCB's permit requirements, and to guide development of the WCP through 2027. Included in this effort were technical evaluations of the nitrogen control systems, grease and sludge handling facilities, and disposal units. Along with project team members, he also determined the process changes necessary to achieve Best Practicable Treatment and Control (BPTC). In addition to producing the WCP 2008 Master Plan, he worked with the RWQCB to produce a work plan and schedule to cease discharge to Mill Creek, as well as a Biosolids Management Plan, both provisions of the City's Waste Discharge Requirements (WDRs).
- Project engineer for the City of Sunnyvale WPCP Master Plan and Primary Treatment Facilities Design. Responsibilities included leading the site layout and planning, and capital improvement program implementation.
- Project manager for the Shandon, California Wastewater Study Peer Review. Responsibilities for the Study included development of several treatment alternatives for both secondary and tertiary treatment levels including activated sludge, Biolac®, and cloth media disk filtration. He also worked with the RWQCB to develop potential, future regulatory requirements associated with land-based effluent disposal. Several disposal alternatives including agricultural irrigation and percolation were also evaluated. Cost estimates and design

criteria were prepared for each of the disposal and treatment alternatives considered.

- Project engineer for the evaluation of centrate (sidestream) treatment options for the City of Thousand Oak's Hill Canyon Wastewater Treatment Plant. The project included an overview and analysis of ANNAMOX-based treatment technologies and an evaluation of conversion of an existing basin (Basin 6) to a DEMON sequencing batch reactor.
- Project manager for the City and County of San Francisco CS-955 On-Call Specialized and Technical Services Contract for the Wastewater Enterprise.
- Project engineer for the City of Merced, California 2010 Urban Water Management Plan. The Urban Water Management Plan was prepared in accordance with the Department of Water Resource's Guidebook to Assist Urban Water Suppliers to prepare a 2010 Urban Water Management Plan.
- Project engineer for the City of Cotati, California 2010 Urban Water Management Plan Support and Review. Efforts for the project included calculation of the City's baseline per capita water use figures and water use reduction plan targets using the four methodologies developed by the Department of Water Resources.
- Project engineer for the County of Santa Barbara, California Los Olivos Preliminary Engineering Report project. Responsibilities included development of four technical memoranda evaluating secondary and tertiary treatment alternatives (MLE, SBR, and MBR), disposal options (percolation, subsurface, and restricted/unrestricted reuse), collection system layouts, siting options, and agency formation.
- Project engineer for the City of Pismo Beach, California Wastewater Treatment Plant Biosolids Handling Study. Responsibilities for this project included evaluation of the existing biosolids handling facilities, and recommendations for upgrade of the thickening and dewatering processes. Alternatives to the rebuild of the City's existing belt filter press were evaluated, and included an evaluation of centrifuges and screw press technologies. A GBT was recommended to replace the existing DAF unit.
- Project engineer for the South San Luis Obispo County Sanitation District, California Wastewater Treatment Plant Preliminary Design Report Peer Review. Responsibilities included preparation of cost estimates and development of design criteria for an activated sludge process with clarification to validate recommendations made in previous report. In addition, several alternatives were also presented including an oxidation ditch, membrane bioreactor (MBR), and biological nutrient removal (BNR) activated sludge processes.
- Project manager for the City of Galt, California Nutrient Management Plan. The Nutrient Management Plan was required as part of the new NPDES to ensure the City's effluent and biosolids disposal practices meet hydraulic loading and agronomic loading rates for nitrogen. Efforts included compiling monthly effluent and biosolids disposal data and preparation of water and nutrient balances.
- Project engineer for the City of Monroe, Washington Wastewater Treatment Plant Phase III Headworks Improvements Study. Responsibilities included evaluation of rehabilitation options for the existing headworks. Several influent pumping, grit removal, and screening options were evaluated.
- Project engineer for the City of Monroe, Washington Wastewater Treatment Plant Phase III Biosolids Handling Improvements Study. Responsibilities included evaluation of digestion and thickening options to increase the capacity of the City's existing aerobic digesters. Options including membrane thickening, gravity belt thickeners (GBT), and construction of additional digesters were evaluated.
- Project engineer for the King County, Washington Combined Sewer Overflow (CSO) Planning Study. Responsibilities included evaluation of several storage and pumping alternatives for the North Beach Basin Area. Detailed site layouts and sections, excavation quantities, staging area requirements, and cost estimates for underground storage facilities were developed.

Timothy J. Loper

Education

MS Environmental Engineering, University of California, Berkeley, 2005

BS Civil Engineering, California State University, Fresno, 2003

Licenses

Civil Engineer, California

Professional Affiliations

Nevada Water Environment Association

American Water Works Association

Mr. Loper has experience in wastewater collection system modeling, water distribution system modeling, water system feasibility studies, wastewater treatment facilities planning, and infrastructure master planning.

- Project engineer for the City of Banning Water and Wastewater Master Plan.
- Project engineer for the City of Oceanside, CA, Integrated Master Plan.
- Project manager for City of Tulare, California, Sewer, Water, and Storm Drain Master Plans. This project developed master planning documents for planning infrastructure improvements to serve rapid growth within the City. Responsible for coordination of the water, sewer, and storm drain computer models that integrate GIS databases into the modeling platform. The City's wastewater collection system included industrial and domestic collection systems with separate treatment facilities. The storm drain project required coordination with Tulare Irrigation District for discharge of storm water from the City's drainage facilities. This project also developed the City's Sewer System Management Plan.
- Project manager for the City of Cotati, California, Wastewater Collection and Water Distribution System Master Plans and GIS Implementation. The City of Cotati contracted with Carollo to develop water distribution system and sewer collection system master plans and its 2010 Urban Water Management Plan, as well as plan and implement the City's first GIS system. Responsibilities included day-to-day project management and client contacts. Also served as project engineer for the Sewer System Master Plan. Carollo constructed hydraulic models of both the water and sewer systems and developed a flow monitoring report from data collected from another consultant. Developed evaluation criteria, assessed existing system deficiencies, and developed plans for future projects.
- Project engineer for the City of Modesto, California, Wastewater Collection System and Treatment Master Plan Update. Responsibilities included construction of the wastewater collection system hydraulic computer model using the City's existing plat maps and GIS database. Also responsible for collection system analysis to determine appropriate flow monitoring locations and sewer basin determination and assistance with the collection system condition assessment. Performed GIS data verification and updated existing databases to reflect current conditions. These responsibilities required the application of GIS and hydraulic modeling software.
- Project engineer for City of Galt, California, Wastewater Collection, Water Distribution, and Storm Drainage Master Plans. This project developed master planning documents for planning infrastructure improvements to serve rapid growth within the City. Responsible for development of the sewer system model that integrated GIS databases into the modeling platform. Developed alternatives to eliminate the largest pump station in the collection system by constructing a 42-inch trunk sewer to the wastewater treatment plant.
- Technical advisor for Clean Water Services West Basin Master Plan. Clean Water Services provides wastewater collection and treatment services to the majority of the City of Portland, Oregon. Clean Water Services retained the services of Carollo to develop a collection system master plan for the its West Basin. Responsibilities included developing the technical methodologies to develop the dry and wet weather flow projections and hydraulic model calibration.
- Project engineer for the City of Hughson, California. Wastewater Collection System Master Plan. Responsibilities included coordination with flow monitoring and surveying subconsultant, construction and calibration of hydraulic computer model using H2OMap Sewer software for dry and wet

weather scenarios, and preparation of a capital improvement program for improvements to serve future growth areas.

- Project engineer for the City of Los Banos, California, Wastewater Collection System Master Plan. This project involved collection and review of as-built drawings to be used in the collection system hydraulic model. The City has severe infiltration and inflow problems resulting from storm drain inlets directly connected to the wastewater collection system. A SWMM hydraulic computer model was used to route historical rainfall events and base wastewater flows for 72-hour simulations. The analysis determined that, if the direct connections were removed, capacity limitations in the existing system would be relieved.
- Project manager for the City of Millbrae Water System Master Plan. Carollo was contracted by the City to complete a water master plan that provided a capital improvement program to help mitigate storage deficiencies and hydraulic constraints caused by the separation of their four pressure zones. Tim was responsible for the update and calibration of the hydraulic model that was developed in InfoWater. The City's primary concern was lack of storage in their lower pressure zone and the potential for emergency outages in the event of a large earthquake. Carollo conducted a seismic evaluation of the water storage tanks and the optimization of the storage needs of the lower zone and rehabilitation of existing tanks.
- Collection system project manager for West County Wastewater District, California, GIS Development and Hydraulic Model Conversion. The District contracted with Carollo Engineers to develop its wastewater collection system GIS database. The tasks included digitizing the District's entire collection system, developing the software and hardware requirements, and converting the District's existing Hydra model to Info SWMM. Additionally, Carollo helped the District upgrade its CMMS software from Hansen version 7 to Hansen version 8 and integrate the GIS and CMMS databases.
- Project manager for the City of Turlock, California, Sanitary Sewer and Storm Water Master Plan.
- Project manager for the City of Chico, California, Sanitary Sewer Master Plan Update.
- Project engineer for the City of Livingston, California, Water Distribution System Master Plan. Responsibilities included construction and calibration of the City's water system computer model to simulate existing conditions and development of evaluation and planning criteria. Also responsible for evaluation and determination of existing system deficiencies and development of system improvements to mitigate those deficiencies.
- Project engineer for the City of Visalia, California, Wastewater Collection System Master Plan. Responsibilities included collection system analysis to determine appropriate flow monitoring locations and sewer basin determination. Constructed the wastewater collection system hydraulic model using the City's existing GIS database and record drawings and conducted an alternatives analysis to mitigate existing system deficiencies and plan for future trunk lines to serve new growth.
- Project engineer for the City of Santa Barbara, California, Sewer Capacity Studies. Responsibilities included allocation and calibration of the wastewater collection system hydraulic model for peak wet weather flows, evaluation of the system for existing deficiencies, and production of a technical memorandum detailing alternatives to mitigate system deficiencies causing sanitary sewer overflows.
- Project manager for the City of Oakland, California, Administrative Order Assistance. Carollo is assisting the City with meeting the requirements of the Environmental Protection Agency's administrative order to eliminate the City's contribution to discharges of untreated wastewater from the East Bay Municipality Utility District's (EBMUD) wet weather facilities.
- Project engineer for the Elsinore Valley Municipal Water District, California, Wastewater Master Plan. Responsibilities included coordination of GIS system integration into the hydraulic model environment and construction of a SWMM model incorporating four separate collection systems lift stations with three wastewater treatment facilities.

Inge Wiersema

Education

MSc Environmental Engineering, Agricultural University, Wageningen, Netherlands, 1997

BS Environmental Engineering, Hogeschool Van Utrecht, Netherlands, 1995

Licenses

Civil Engineer, California (C66123)

Professional Affiliations

American Water Works Association

Association of Women in Water, Energy, and Environment

Water Environment Federation

WaterReuse Association (Technical Chair of Los Angeles Chapter)

Ms. Wiersema is an environmental engineer with 22 years of experience and is specialized in water system planning and water resources projects. She has been involved in more than 100 master planning and hydraulic modeling projects for water, recycled water, wastewater, and stormwater systems in Southern California.

She has also worked on various groundwater management plans, watershed management plans, urban water management plans, sewer system management plans, and water supply studies. Her technical experience also includes conceptual and preliminary design of pipelines, pump stations, and water treatment plants. A selection of her experience includes:

- (Ongoing) Assistant project manager for the One Water LA 2040 Plan for the City of Los Angeles, California. The Plan takes a holistic and collaborative approach to consider all water resources (surface water, groundwater, potable water, gray water, wastewater, recycled water, and stormwater) as "One Water." The Plan will guide the City with strategic and multi-billion dollar decisions for water infrastructure projects to make LA a more water resilient and sustainable City. This project also includes the preparation of five facilities master plans (4 wastewater treatment plant facility master plans and 1 stormwater facility master plan), development of long-term policies, various special studies (e.g. LA River Flow Study, Satellite Wastewater Treatment Feasibility Study, Rate Study), preparation of a programmatic environmental impact report (EIR), and comprehensive stakeholder outreach. As assistant Project Manager, Inge was responsible for the coordination of the work effort with City staff from multiple departments and more than 20 subconsultants under an extremely aggressive schedule of 18 months.
- Project manager for the 2015 integrated water, recycled water, and sewer master plan for the City of Oceanside, California. This project includes (recycled) water demand/sewer flows forecasting, water supply analysis, hydraulic model updates and calibration of the water and wastewater system models, and development of a new recycled water system model.
- Project engineer for Integrated Water Management Plan for the City of Riverside, California. The ongoing project will identify a supply strategy to meet the City's potable and non-potable water demands, which will consider new wells, recycled water, groundwater recharge, salinity management, water conservation, stormwater, water treatment, and groundwater banking projects. The water supply evaluation identified 15 new water supply project opportunities.
- Project manager for the 2014 comprehensive master plan for Padre Dam Municipal Water, California. This integrated master plan involves the District's water, wastewater, and recycled water infrastructure. This project includes (recycled) water demand/sewer flows forecasting, water supply analysis, hydraulic model updates for the water and recycled water systems, development and calibration of a new sewer system model, and field condition assessment of key facilities.
- Project manager for the 2015 Integrated Resources Plan (IRP) Update for Otay Water District (OWD), California. This project included the update of water supply project descriptions and cost estimates for approximately 35 potential potable and recycled water supply projects. These projects are subsequently screened and selected projects are grouped into portfolios. These supply portfolios are then evaluated with an updated Stella Model and Criterion Decision Plus (CDP) software. A water resources supply implementation plan with a planning horizon of 2040 will be developed with the top-ranked projects.
- Technical advisor for the 2015 Water Master Plan for the City of Oxnard, California. This project included water demand forecasting, hydraulic modeling

analysis using WaterGEMS, existing and future system analysis, development of a capital improvement program (CIP) including a rehabilitation and replacement program. The findings were presented in a comprehensive water master plan report that was part of the overall Integrated Master Plan.

- Project engineer for the City of Santa Barbara, California, Desalination Plant Reactivation Study. Modeled distribution system improvements required to move 3,125 AFY of water from the City's desalination plant to Reservoir 1 and into the Sheffield Pressure Zone. The study estimated costs and schedule for rehabilitating the City's seawater reverse osmosis plant that was built in 1990 and has remained in standby mode since 1991.
- Project manager for the 2015 Recycled Water Feasibility Study to increase the region's water supply with the sustainable and reliable use of recycled water. Interconnection between the City of Pomona, Monte Vista Water District, and Inland Empire Utilities Agency were evaluated to develop water supply alternatives that would provide IEUA with regional water supply benefits.
- (Ongoing) Project manager for the 2016 Water System Master Plan for Cucamonga Valley Water District, California. This ongoing project includes potable water demand forecasting, InfoWater hydraulic modeling updates, hydraulic model calibration using SCADA and pressure logger data, and the development of customer specific diurnal curves.
- (Ongoing) Project manager for the water system portion of the Utilities Infrastructure (UIP) Master Plan for the Los Angeles International Airport (LAX). The UIP included analyzing future water demand projections based on passenger counts. As part of this effort, As-builds were utilized to update the existing LAX hydraulic model. Alternatives were then developed in the model to analyze existing and future water and fire water system deficiencies. Improvement projects were then prioritized into a phased CIP within the UIP.
- Project manager for the 2010 Water Master Plan for Victorville Water District, California. The project included projection of potable water demands, development and calibration of a hydraulic model in H2ONET®, and hydraulic analysis to size pipeline, reservoir, and booster station improvements. The findings of the project were documented in a comprehensive water master plan and a \$400 million capital improvement program.
- Project manager for the 2016 Sewer Master Plan for the City of Colton, California. This project included wastewater flow forecasting, hydraulic model development and calibration using field flow monitoring data. Existing and future system analysis was conducted to develop a capital improvement program (CIP) including a rehabilitation and replacement program. The findings were presented in a comprehensive sewer master plan report that was developed in conjunction with the 2016 Water Master Plan.
- Project manager for the 2015 Wastewater Flow Monitoring Study for the Padre Dam Municipal Water District (PDMWD), California. This ongoing project includes the installation and data analysis of a large number of flow monitoring meters in PDMWD's sewer conveyance system. Findings are documented in an engineering report.
- Project manager for the Sewer Master Plan for the City of Hughson, California. The project included development of a sewer model in H2OMAP Sewer®, wastewater flow projections, model calibration with field data, hydraulic analysis, and preparation of a capital improvement plan. The findings of the project were documented in a comprehensive report.
- Project manager for a Sewer Master Plan for the City of Banning, California. The project included development of a sewer model from a geographic information system (GIS), wastewater flow projections, model calibration with field data, supply analysis, hydraulic analysis, and preparation of a capital improvement plan. The findings of the project were documented in a comprehensive sewer master plan.

Lydia Holmes

Education

MS Environmental Engineering, University of California, Davis, 1995

BS Civil Engineering, University of California, Davis, 1992

Licenses

Civil Engineer, California

Professional Affiliations

Envision TM Sustainability Professional Water Environment Federation Society of Wetland Scientists

Ms. Holmes, a vice president with Carollo Engineers, has built her reputation on delivering strategic plans by listening to clients' needs and understanding the big picture. Her skills have been applied to high profile master planning and improvement projects. Her planning experience includes water supply assessments; projecting flows and loads; evaluating wastewater treatment, reuse, and disposal alternatives; evaluating sustainability; evaluating receiving water limitations; and leading stakeholders through decision processes to determine preferred projects. Increasingly, Ms. Holmes' work applies sustainability concepts such as using greenhouse gas emissions to evaluate alternatives and incorporating low impact development concepts into projects to produce long-term, economically viable treatment solutions. Relevant project experience includes:

- Project manager for the Zone 7 Water Agency, California, Tri-Valley Potable Reuse Feasibility Study.
- Project manager for the County of San Luis Obispo, California, Paso Robles Paso Robles Basin Supply Options Study.
- Project manager for San Mateo Integrated Wastewater Master Plan. Evaluated long term needs of the wastewater collection and treatment system to address aging infrastructure as well as meet current and future permit requirements. City was under requirement of a CDO to eliminate SSOs and under an NPDES permit requiring elimination of blending. Therefore, wet weather flow management was a key issue. Developing a prioritized CIP for replacement of aging infrastructure was also critical. The plan also considered recycled water facility needs to meet sustainability goals of the City. The final CIP provide for investment of \$900 million in storage, conveyance and treatment over the next 20 years to meet current and future needs.
- Principal in charge for Soquel Creek Water District, California, Groundwater

Replenishment Feasibility Study. Project investigates options to augment Soquel's water supply with 1500 acre-feet/year of purified water to reduce impacts of over-pumping that are resulting in sea water intrusion. Option include new satellite treatment as well as regional options at an existing WWTP. Project included conducting a public survey to determine the acceptance of potable reuse in the service area. Responses were favorable.

- Project manager for the City of Palo Alto Long Range Facility Plan. Project considers facility needs over 50 years to accommodate regulatory changes, service area growth and aging infrastructure. Long term solids treatment/disposal is a key issue. Considered options for replacing existing incineration process with anaerobic digestion, gasification, or regional options, such as hauling to adjacent facilities for treatment. For liquids treatment, evaluated facilities needed to meet increasing stringent nutrient requirements, potential future CEC removal and the need for desalting for recycled water expansion.
- Project manager for the South San Francisco/San Bruno Wastewater Facility Plan. Examined facility to determine future needs to comply with more stringent Bay discharge requirements including reduced blending and near shore discharges during wet weather. Also developed CIP of improvements required for replacing aged facilities and improving treatment performance. Evaluated opportunities for on-site energy generation and efficiency. Presented results of plan to both SSF and SB City councils and the SFRWQCB. Assisted in renewal of the NPDES permit.
- Carollo's project manager for Lower Santa Clara Salt and Nutrient Management Plan developed for a coalition of cities and the County of Ventura, California. Providing identification of recycled water uses, compiling surface/groundwater data evaluating sources of salts and nitrates, and developing implementation measures.

- Project engineer for the City of Fresno, California, Fresno-Clovis Regional Wastewater Reclamation Facilities Master Plan. Responsible for compilation and evaluation of historical treatment plant performance, projection of future flows and loads for planning future facilities, and setting up a solids balance model used to project future sludge production. Evaluated existing facilities capacity, determined design and standby criteria, evaluated future facilities needs, and determined layout of future facilities. Performed a potential reuse market assessment in the Fresno, California area. Alternatives included community-based irrigation and industrial water reuse, groundwater recharge, and agricultural irrigation including supplying recycled water to irrigation districts.
- Engineer for the City of Morro Bay, California, Cayucos Sanitary District/City of Morro Bay Comprehensive Recycled Water Study. Developed alternatives for implementing a recycled water program, including pipe routing and sizing. Conducted a plant evaluation and recommended facilities needed to produce recycled water. Developed costs for facility improvements, transmission, and storage requirements.
- Co- project manager for the development of a 30-year wastewater master plan for the City and County of San Francisco as a joint venture with Brown and Caldwell and Metcalf and Eddy. Carollo provided the project management for the master plan, which includes providing the overall direction of work, coordinating the other joint venture members and subconsultants, preparing materials for presentations to the San Francisco Public Utilities Commission, facilitating team brainstorming workshops, and developing evaluation criteria (including sustainability and greenhouse gases) to screen and compare alternatives. A focus of the plan was to evaluate effects of climate change on the planning efforts. Evaluated the range of precipitation changes and sea level rise due to climate change.
- Project engineer for the Los Osos Wastewater Treatment Plant Project Development project for San Luis Obispo County, California. The project developed plans for a future wastewater treatment plant and sewer system to satisfy the RWQCB requirements, as well as meet water management and other environmentally responsible objectives of the community. The community has developed multiple facilities plans since the early 1980s, but in each case, the plans were halted by stakeholder opposition. Carollo was hired to participate in a process to plan viable project alternatives for a plant and collection system. The project team worked with the County to develop a list of alternatives including: effluent disposal/reuse, treatment technology, solids treatment and disposal, treatment plant siting, and collection system. This information was compiled into a report for review by the County, a hand-picked Technical Advisory Committee, the RWQCB, and the community. The Carollo team refined the alternatives and identified Viable Project Alternatives that can be permitted, funded, and constructed in the near future.
- Project manager for the City of Davis, California, Wastewater Strategic Master Plan and Preliminary Design.
- Project engineer for developing plan for a "Wetlands Park" for City of Petaluma, California. The plan centered around the development of wetlands used to polish wastewater. Public access, educational and recreational opportunities will be provided on-site. Additional features of Wetlands Park include restoration and enhancement of existing tidal marsh, storm water treatment and distribution with wetlands, riparian restoration and enhancement and development of trails with native landscaping.
- Project engineer for a planning study for the City of Petaluma, California, Water Recycling Facility Project. Responsible for developing alternatives for new treatment facilities to replace the City's 1938 wastewater treatment plant. The new facilities will produce California Title 22 unrestricted use quality water. Alternatives evaluated include advanced facultative ponds, aerated lagoons, primary clarifiers followed by oxidation ponds, activated sludge, and extended aeration. Process modeling for each alternative determined sizing. Each alternative also considered dissolved air flotation versus vegetated wetlands for algae removal. Additional polishing of nutrients and metals with wetlands was evaluated. In addition to developing costs for each alternative, a detailed evaluation compared neighborhood impacts, public amenities, sustainability, and other wastewater treatment considerations (reliability, biosolids production, etc.).

Elisa A. Garvey

Education

PhD Environmental Engineering, University of Massachusetts, 2000

MS Environmental Engineering, University of Massachusetts, 1995

BS Mechanical Engineering, Johns Hopkins University, 1993

Licenses

Civil Engineer, California

Professional Affiliations

International Water Association

Water Environment Federation

Dr. Garvey's experience includes water resources management, water quality assessments, regulatory and permitting support, and master planning.

- Engineer for the City of Los Angeles, California, One Water LA 2040 Plan. The integrated planning approach for this project incorporates surface water, groundwater, recycled water, desalination, and stormwater projects into an overall water supply planning process. Responsible for compiling information on stormwater related project to be considered as components of system-wide portfolios.

- Project manager for the Bay Area Clean Water Agencies, California, project to develop a white paper on stormwater diversions. The driver for the project was interest among regulators in implementing stormwater diversion projects in northern California to reduce concentrations of mercury and PCBs in stormwater runoff to San Francisco Bay. Developed the white paper using published and grey literature, as well as agency case studies. The final white paper documents the institutional, technical, and economic challenges and opportunities associated with stormwater diversions.

- Project engineer for the Bay Area Clean Water Agencies, California, Storm Water Diversion White Paper and Analysis. The driver for the project was interest amongst regulators in implementing stormwater diversion projects in northern California for the purpose of reducing concentrations of mercury and PCBs in stormwater runoff to San Francisco Bay. The objective of this White Paper is to identify the challenges and opportunities associated with diversions of flow from stormwater systems to a publically owned treatment works. Carollo developed the White Paper using published and grey literature and case studies from several agencies, including the City of Los Angeles, Orange County Sanitation District, City of Ventura, City of Santa Cruz, and East Bay Municipal Utility District. The final white paper documents the institutional, technical, and economic

challenges and the opportunities associated with stormwater diversions.

- Project manager for the City of Bakersfield, California, Stormwater Management Plan (SWMP) Update. Led workshops to outline new SWMP components, identify responsible parties, and establish schedules. Provided technical oversight for the SWMP update, which was approved by the Central Valley Regional Water Quality Control Board.

- Project manager for on-call stormwater services for the City of Bakersfield, California. Provided technical and regulatory assistance to City staff to support implementation of its new Stormwater Management Plan.

- Project engineer for the City of Reedley, California, Phase II stormwater permit compliance. This project involved developing the City's annual report for the previous Phase II permit compliance and developing a guidance document per the new Phase II permit. Development of the annual report involved a review of storm water program activities, meetings with various City staff that were responsible for program elements, and compilation of the data and documents into the annual report. As part of the guidance document development, we conducted preliminary evaluation of the gaps between the City's previous storm water management program and the future program designed to meet the new permit.

- Engineer for the Cities of Reno and Sparks and Washoe County, Nevada, Phase I, II, and III Permitting/Non-Structural Program. Responsible for quantifying pollutant loads from point and non-point sources (including stormwater runoff). The estimates were incorporated into the watershed models to evaluate compliance with an existing TMDL.

- Project engineer for City of Ventura, California, Recycled Water Market Study and Recycled Water Feasibility Study. Upon completion of the market analysis the feasibility study included a more

detailed analysis of recycled water demands, required water quality (by type of use) and treatment trains required to meet water quality targets. Developed capital and operations and maintenance costs. In addition, provided oversight and direction to the City on the constructing a demonstration scale potable reuse plant. Assisted in establishing operating conditions and developed a monitoring plan for demonstrating treatment efficacy and attainment of water quality standards.

- Project engineer for the Water Research Foundation Project No. 4536, "Blending Requirements for Water from Direct Potable Reuse Facilities". The project evaluated the impacts of blending, advanced treatment, and blending location on finished water quality.
- As a subconsultant to WSC, contributed to the development of the City of Pismo Beach, California, Recycled Water Feasibility Study. Developed treatment trains and costs for various end recycled water uses. Contributed to analysis of regulatory constraints for surface recharge or groundwater injection for indirect potable reuse options.
- Engineer for the San Jose/Santa Clara Water Pollution Control Plant Master Plan for the City of San Jose, California. Responsible for statistical evaluation and future predictions of historical flows, conventional pollutant loads, and non-conventional pollutant concentrations.
- Assistant project manager for the Inland Empire Utilities Agency (IEUA), California, Facilities Balancing and Optimization Model. The IEUA system consists of liquids treatment at four reclamation plants and solids treatment at two treatment plants. Responsible for overall development of an optimization model designed to help IEUA better understand how the plants work as a system and to identify opportunities for improvements in operations and planning capital improvements.
- Project engineer for the 2020 Master Plan for Sacramento Regional County Sanitation District, California, Sacramento Regional Wastewater Treatment Plant. Responsible for providing technical support services for the 2020 Master Plan Environmental Impact Report (EIR), permitting process, and updates to the 2020 Master Plan technical documents.
- Project engineer for the City of Fresno, California, Report of Waste Discharge and anti-degradation analysis for proposed recycled water projects. Responsibilities included development of the anti-degradation analysis report for the proposed recycled water program, with emphasis on potential impacts to nitrate and salinity in the underlying groundwater basins.
- Project manager for the cities of Oxnard and Pleasant Valley, California, Salt and Nutrient Management Plan (SNMP). Responsible for leading the project team to develop the SNMP (ongoing), which involves groundwater basins characterization, groundwater quality assessment, evaluation of assimilative capacity, identification of sources of salts and nutrients, fate/transport modeling, management measures identification, anti-degradation analysis, and environmental review.
- Project engineer for the Ventura County Watershed Protection District, California, Lower Santa Clara River. Responsible for providing technical and regulatory support for SNMP development. Key tasks included synthesis and evaluation of existing data, identifying overall recycled water goals and objectives, quantifying sources of salts and nutrients, and developing management measures.
- Project engineer for developing comment letters to the U.S. Environmental Protection Agency (EPA) on behalf of the Bay County Utilities Services Department, Florida. Responsible for developing comment letters to the EPA for (1) comments on the Florida Statewide Mercury TMDL, (2) comments on the Water Quality Standards for the State of Florida's Estuaries, Coastal Waters, and South Florida Inland Flowing Waters (Coastal Rule), and (3) comments on Water Quality Standards for the State of Florida's Streams and Downstream Protection Values for Lakes: Remanded Provisions (Inland Rule). The comment letters addressed the rulemaking process, technical basis, and potential impacts on the regulated community.

Ryan F. Orgill

Education

*BS Civil Engineering,
California State
University, Fresno, 2006*

Licenses

*Civil Engineer, Nevada,
California*

Professional Affiliations

*American Water Works
Association
California Water
Environment Association
- Central San Joaquin
Section*

Mr. Orgill joined Carollo in 2005 and has experience in master planning, hydraulic modeling, sewer system management planning, urban water management planning, and geographic information systems (GIS).

- Engineer for the City of Oceanside, California, Sewer System Master Plan. Responsible for system evaluation, hydraulic modeling, development of the Sewer Master Plan report, and custom model training for City staff.
- Project engineer for the City of Tulare, California, Sewer, Water, and Stormwater Master Plans and Sewer System Management Plan. Tasks included creation and calibration of a dynamic hydraulic sewer system model, development of flow routing criteria, and evaluation of the existing sanitary sewer system.
- Staff engineer for the City of Galt, California, Wastewater Collection, Water Distribution, and Stormwater Master Plans. Calibrated the hydraulic computer model, assisted with Master Plan report preparation, and developed a staged CIP.
- Staff engineer for the County of Madera, California, Infiltration/Inflow Sewer Capacity Study. Developed and calibrated a hydraulic computer model for the collection system, and evaluated the existing collection system under the 10-year, 24-hour duration design storm.
- Hydraulic modeling lead for the ongoing City of Modesto Wastewater Collection System Master Plan. The hydraulic model was originally constructed in H2OMap Sewer as part of the previous master plan. In advance of the wastewater collection system master plan update, the City contracted with Carollo to convert the hydraulic model from H2OMap Sewer to the more advanced InfoSWMM platform. Responsibilities as part of the master plan update included updating and recalibrating the InfoSWMM hydraulic model, which involved more sophisticated simulation of stormwater system cross connections within the InfoSWMM model. Other

responsibilities include development of existing and future wastewater flow projections, improvement alternatives to mitigate existing capacity deficiencies and to service future growth, and a capital improvement plan.

- Staff engineer for the City of Galt, California, Water System Master Plan. Assisted with preparation of the Master Plan report and developed a staged CIP.
- Staff engineer for the City of Hughson, California, Water System Master Plan. Assisted with preparation of the Master Plan report and developed a staged CIP.
- Project engineer for the City of Tulare, California, Water System Master Plan. Created and calibrated the hydraulic model, developed analysis criteria, evaluated the existing water system, developed improvement projects, and developed a staged CIP.
- Staff engineer for the City of Galt, California, Stormwater System Master Plan. Developed capital improvements to service future growth within the study area, assisted in preparing the Master Plan report, and developed a staged CIP.
- Staff engineer for the City of Hughson, California, Stormwater System Master Plan. Recommended future improvements using InfoSWMM® hydraulic modeling software to account for future growth, developed a staged CIP, and assisted in preparing the Master Plan Report.
- Project engineer for the City of Tulare, California, Stormwater System Master Plan. Created the hydraulic model, developed analysis criteria, evaluated the existing stormwater collection system, developed improvement projects, and developed a staged CIP.
- Collection system engineer for the West County Wastewater District, California, District-Wide Master Plan. Prepared and calibrated a dynamic collection system model to evaluate wet weather storm events to simulate existing flow conditions.

- Staff engineer for the Victorville Water District, California, 20-Year Comprehensive Water Master Plan. Responsibilities included calibration of the District's ID2 water distribution system hydraulic model, evaluation of the ID2 water system, and development of improvement projects to mitigate existing deficiencies and accommodate future growth.
- Project engineer for the City of Fresno, California, Collection System Master Plan. Responsible for hydraulic model update and calibration of the all-pipe sewer system hydraulic model, development of improvement projects to mitigate capacity deficiencies, and development of a CIP.
- Hydraulic modeling lead on the City of West Sacramento, California, Water System Master Plan Update. Responsibilities included the development and calibration of a water system hydraulic model, system evaluation under existing and year 2035 demand conditions, and development of a staged capital improvement plan for the City.
- Project engineer for the City of Shasta Lake, California, 2016-2026 Water Master Plan. Responsibilities included hydraulic model development and calibration using InfoWater modeling software, and capacity evaluation of the distribution system.
- Hydraulic modeling lead for the City of Santa Barbara, California Water Model Update project. Responsibilities included the update and calibration of the City's water system hydraulic model using the InfoWater modeling software application, development of a system specific diurnal pattern for the City, and custom hydraulic model training for City staff.
- Project engineer for the City of Cotati, California, Sewer and Water System Master Plans. Responsibilities included hydraulic model development and calibration, existing and build out analysis of the water and sewer systems, development of capital improvements to mitigate existing deficiencies and to service future growth, development of a staged capital improvement plan, and development of the final Sewer and Water System Master Plan reports.
- Staff engineer for the Los Angeles International Airport (LAX) Phase I fire flow analysis for the Central Terminal Area (CTA) of LAX, California. Responsibilities included the development and calibration of a hydraulic computer model of the CTA water distribution system, development of evaluation criteria, and a fire flow analysis of the CTA distribution system. The model calibration consisted of both an extended period simulation and fire flow calibration of the CTA system. The fire flow analysis of the CTA distribution system consisted of the evaluation of a number of potential alternatives to increase the available fire flow at various areas in the CTA distribution system.
- Project engineer for the City of Oakland, California, Sanitary Sewer Collection System Master Plan. Responsible for construction of the City's hydraulic computer model using the InfoSWMM modeling software package, model calibration, capacity analysis, development of improvement projects to mitigate capacity deficiencies, capital improvement cost estimate, and preparation of a technical report documenting the results of the analysis for submission to the U.S. Environmental Protection Agency in accordance with the City's Stipulated Order.
- Project engineer for the City of Turlock, California, Sanitary Sewer and Storm Water Master Plans. Responsibilities included overseeing the construction of the City's sewer and stormwater system hydraulic models. The City's sewer collection system includes numerous direct stormwater connections to the sewer system in the City's downtown area.
- Project engineer for the City of Chico, California, Sanitary Sewer Master Plan Update. Responsible for conversion and update of the City's previous HYRDA collection system model to the InfoSWMM hydraulic modeling software application.
- Staff engineer for the Elsinore Valley Municipal Water District, California, Wastewater Master Plan Update. Responsibilities included development and calibration of the District's hydraulic computer model, evaluation of the District's existing collection systems, development of improvement recommendations to mitigate existing deficiencies and serve future growth, and preparation of the District's master plan report.

David K. Harkins

Education

*PhD Civil Engineering,
Texas Tech University,
1998*

*MS Civil Engineering,
Texas Tech University,
1995*

*BS Petroleum
Engineering, Texas Tech
University, 1992*

Licenses

*Professional Engineer,
Texas, Oklahoma,
Mississippi*

Professional Affiliations

*American Water Works
Association*

*American Society of Civil
Engineers*

*Texas Water
Conservation Association*

Dr. David K. Harkins is the Texas Water Resources Lead of Carollo Engineers in Austin, Texas. Dr. Harkins has over 21 years of experience in water resources and environmental engineering design and planning including studies dealing with water supply, water quality analysis and modeling, wastewater permitting, water availability modeling, water resources management, instream flow analysis, environmental flow analysis, bay and estuary evaluations, groundwater modeling and management planning. Dr. Harkins has been involved in a variety of civil and environmental projects across Texas.

- Assisted in the Spring Flow Evaluation in Comal County, Texas. Dr. Harkins was retained by the Edwards Aquifer Authority to evaluate springflow in the Comal River. The project consisted of evaluation of groundwater movement in the Edwards Aquifer in relation to spring discharge at Comal and San Marcos Springs. Dr. Harkins assisted in the evaluation of groundwater modeling scenarios and determining the relationship of groundwater movement in the karst aquifer. Ultimately, the springflow discharge during historical pumping conditions from the Edwards Aquifer were related to stream flow in the Guadalupe River.

- Assisted in the Groundwater Availability Modeling in Robertson County, Texas. Dr. Harkins was retained by OSR Water Supply Corporation (WSC) to provide a hydrogeologic investigation for a proposed a 2,000 gallon per minute (gpm) maximum capacity municipal water well into the Simsboro formation in Robertson County, Texas. Dr. Harkins was the project manager and was responsible for data review and evaluation, model development and project report. The primary purpose of this hydrogeologic investigation was to evaluate the groundwater resources of the Simsboro formation near the proposed OSR WSC groundwater well site. The project team utilized the Groundwater Availability Model (GAM) developed by Texas Water Development Board (TWDB) for the

Central Queen City and Sparta Aquifer. The hydrogeologic report was completed and submitted as part of the groundwater application.

- Assisted in the Hydrogeologic Evaluation in Kenedy County, Texas. Dr. Harkins was retained to evaluate the hydrogeologic conditions for a wind energy generation site in Kenedy County in south Texas. Dr. Harkins evaluation consisted of determining the impacts of the wind farm site on the hydrology and sub-surface hydrology. Dr. Harkins collected and reviewed site specific data including geology reports, reports pertaining to groundwater water quality and movement, and reports consisting of wetlands and surface water and groundwater interaction. Dr. Harkins also evaluated site specific data from construction activities including piezometer and survey data for dewatering activities. Dr. Harkins also recommended additional piezometer installation and collection of water quality data.

- Assisted in the Groundwater Availability Modeling in Carson County, Texas. Dr. Harkins provided his assistance in the modification of the GAM developed for the Texas Water Development Board (TWDB) for the Northern Ogallala Aquifer. The modifications were performed for the Pantex Plant located in Carson County. As part of this project, Dr. Harkins obtained the Groundwater Availability Models (GAM) from the TWDB, reviewed the model and documentation supplied by the TWDB and then executed the existing model. Dr. Harkins assisted in the modification of the model to MODFLOW SURFACT to allow the model to have pumping constraints in order to prevent the cells from going dry for the remainder of the simulation period. Additional modification included "shrinking" the grid spacing to less than the one-square-mile grid for areas of particular interest in Carson County within the Pantex Plant. New modeling scenarios were performed to determine the impact of groundwater depletion with pumpage limits in place.

- DCEA Mustang Power Station Groundwater Management Plan – Denver City, Texas: This groundwater management plan included groundwater resources modeling of the Ogallala Aquifer in the Southern High Plains to ensure enough groundwater supply to meet the demands of Mustang Power Station through year 2022. Under the terms of the station’s contract, this plan must be re-evaluated and updated every two years to protect the groundwater resources of the Ogallala Aquifer at Mustang Station and the surrounding vicinity. Since this power station was built, Dr. Harkins assisted in seven separate groundwater modeling studies (2001, 2003, 2005, 2007, 2009, 2011 and 2013) for the facility utilizing the widely accepted Ground Water Vistas™ as the groundwater modeling tool. Some aspects of this project included the analysis of pressure transducer data from monitoring wells, development of a regional model of the Southern High Plains Aquifer and a local/subregional model of the Ogallala Aquifer at the facility, and development of a well pumping schedule with particular importance given to individual well rates and well placement to ensure that saturated thickness levels are maintained through 2022.

- Assisted in the groundwater pumpage determination in Oklahoma. Dr. Harkins assisted in the determination of maximum pumpage rates from several aquifers in Oklahoma. Analysis included investigation of the aerial extent of these aquifers and the State regulations of pumpage withdrawal rates based on the amount of surface acres owned. Dr. Harkins coordinated with the Oklahoma Water Resources Board and the client to facilitate information exchange.

- Assisted in the Groundwater Availability and Feasibility in Hudspeth County, Texas. Dr. Harkins was involved in a groundwater availability and feasibility study in Hudspeth County. Dr. Harkins assisted in reviewing geologic logs in the area for water bearing strata, evaluated data obtained for water quantity and quality and evaluated the feasibility of constructing a pipeline to provide pumped water to users.

- Research assistant in Ogallala Groundwater Modeling in Lubbock, Texas. Dr. Harkins was a research assistant for the Department of Civil Engineering at Texas Tech University in Lubbock,

Texas from Jan. 1997 to May 1998. The Texas Water Development Board (TWDB) and the Texas Tech University Water Resources Center funded Dr. Harkins’ dissertation project. For his dissertation, he converted the Texas High Plains groundwater model (Ogallala Aquifer) used by the TWDB to MODFLOW. The model conversion required changes in the MODFLOW FORTRAN code to allow for transmissivity and saturated thickness constraints to be accurately defined within the MODFLOW module packages. The MODFLOW model was then used to predict how the saturated thickness of the Ogallala aquifer would be affected by future groundwater use. Dr. Harkins has published two articles on his research and presented the results at the Texas Section ASCE meeting held in May 1998.

- Assisted in Pantex/BWXT Site-wide Ecological Risk Assessment (ERA) in Amarillo, Texas. Dr. Harkins assisted in a sample collection program initiated to obtain for additional data needed to support the ERA. Tasks include coordination with Pantex personnel, organization of sampling crews, sampling, QA/QC and reporting requirements. Both surface water and sediment samples are being collected at five separate playas at approximately 18 sites per playa to represent potential points of exposure and biologically active zones.

- Project manager for North East Texas Regional Water Planning Group Region D to develop the 2016 regional water supply plan. Dr. Harkins was responsible for management of contracts and deliverables, project schedules, diverse stakeholder issues, statutory requirements, and providing technical assistance. Dr. Harkins has assisted the planning group with finalizing the non-municipal demands, evaluated water strategies, and provided guidance with developing new water supply strategies. Additional activities included: review of population forecasts and development and gaining acceptance of alternative forecasts as necessary; collection and management of data and information available from relevant sources; and application of the knowledge of statutory and regulatory policies affecting water supply, water quality, water conservation, and drought management issues for both surface and groundwater.

Thomas F. Seacord

Education

MS Civil/Environmental Engineering, Clarkson University, New York, 1998

BS Civil/Environmental Engineering, Clarkson University, New York, 1996

Licenses

Professional Engineer, Utah, Florida

Environmental Engineer, Texas, Idaho

Professional Engineer, South Carolina, Ohio, Illinois

Professional Affiliations

American Water Works Association

American Membrane Technology Association - Board of Directors (2002-2015)

*Southwest Membrane Operators Association
Southeast Desalting Association
International Desalting Association*

Northwest Membrane Operators Association - Board of Directors (2012-2014)

Mr. Seacord, a vice-president with Carollo Engineers, has 20 years of experience in water treatment and design. He is a nationally recognized expert in the field of desalination. He has taken lead roles in desalination project planning, pilot testing, design, construction, and startup. Specific experience includes:

- Project manager/project engineer for the City of Santa Barbara, California, Seawater Desalination Plant Rehabilitation Study. Responsible for generating estimated costs and schedule for rehabilitating the City's seawater reverse osmosis plant that was built in 1990 and has remained in standby mode since 1991. Evaluated existing infrastructure, equipment, and permits to generate estimated costs and schedule for reactivating the facility. Also generated operating costs and looked at incorporating new technologies, including energy recovery devices, to reduce energy and operating costs.
- Project manager/project engineer for the City of Santa Barbara, California, Seawater Desalination Plant Reactivation. Provided preliminary design, permitting, and Owner's representative services for the Design-Build-Operate (DBO) delivery of the \$44-million desalination plant reactivation.
- Project engineer for the design of the Cambria Community Services District, California, 1.2-mgd seawater desalination plant. Prepared plans and specifications and coordinated efforts of discipline engineers for the design/build delivery of this project. Project elements include a demonstration testing program, horizontal collector well intake, and outfall.
- Project engineer for the Affordable Desalination Collaboration's seawater desalination demonstration project at Port Hueneme, California. Demonstrated energy consumption rate of 6 kW-hr/kgal is approximately three times less than ever seen before. Mr. Seacord was responsible for assisting in the development of the demonstration equipment specifications, and he was solely responsible for

developing the testing protocol as well as interpreting and reporting the test results.

- Project manager for the City of Santa Barbara, California, Subsurface Desalination Intake and Potable Reuse Feasibility Study. Performed feasibility assessments of multiple subsurface intake technology alternatives and sites. Evaluated indirect and direct potable reuse opportunities, including aquifer recharge in the Foothills Basin and raw water production for the City's Cater Water Treatment Plant and Charles Meyer Desalination Plant. Work was completed with regulatory and public input during facilitated public meetings.
- Reverse osmosis process designer for the Collier County, Florida, Northeast Regional Water Treatment Plant. This \$70-million Greenfield 10-mgd brackish reverse osmosis treatment plant (expandable to 40 mgd) includes a design that must respond to degrading water quality and more than 8 mg/L of hydrogen sulfide. Key features of the reverse osmosis design include no-acid pretreatment, noise isolation of the reverse osmosis feed pumping, accessibility to all instruments and valves, and pressure exchangers for energy recovery.
- Project manager for the design and construction of the Deuel Vocational Institute, California, 0.8-mgd reverse osmosis treatment plant and concentrate disposal system. This \$26-million project provides potable water to the Deuel Vocational Institute prison facilities to comply with two consent decrees related to drinking water and effluent water quality. Concentrate disposal will be a zero liquid discharge using a vapor compression brine concentrator process and a deep injection well.
- Project engineer/project manager for the Alameda County Zone 7 Water Agency, California, Demineralization project. Carollo was charged with the design of a \$24-million, 10.9-mgd reverse osmosis treatment plant that removes salt that has accumulated in the Livermore-

Amador Valley's groundwater basin and provides potable water to the Agency's customers. Mr. Seacord was responsible for developing the process mechanical design concepts and coordinating activities with electrical, structural, and civil discipline engineers. Mr. Seacord was also responsible for developing contract documents, which included prepurchase of the reverse osmosis process equipment.

- Project manager/project engineer for various brackish water energy recovery evaluations and implementation projects, including:
 - Lee County Utilities, Florida, North Lee County WTP – Began operating 2011.
 - Jordan Valley Water Conservancy District, Utah, Southwest Groundwater Treatment Plant – Began operating in 2011.
 - City of Wichita Falls, Texas – Evaluation.
 - Zone 7 Water Agency, California – Evaluation.
 - Eastern Municipal Water District, California, Menifee Desalter – Evaluation.
- Project manager/project engineer for the South Island Public Service District, South Carolina, Water Supply Master Plan. Evaluated the time associated with well failure due to salt water intrusion and developed water supply replacement alternatives including aquifer storage recovery (ASR), brackish and seawater reverse osmosis, purchasing water from a neighboring utility, and reuse/conservation. Transmission and storage improvements were also investigated.
- Principal investigator for a project titled Guidelines for the Use of Stainless Steel in the Water and Desalination Industries. The project is jointly funded by the Water Research Foundation, the US Bureau of Reclamation and the Nickel Institute. The purpose of the project is to develop water quality guidelines for selecting stainless steel materials considering temperature, pH, chloride, and chlorine concentrations.
- Principal investigator for the Water Research Foundation Seawater Desalination Intake Study. This study developed the following: 1) a state-of-the-science report that documents current and promising intake alternatives, regulatory and

stakeholder drivers; 2) a user-friendly decision tool to help people sort through the matrix of issues that impact a successful seawater intakes.

- Quality manager for the expansion of the Chino Basin Desalting Authority, California, Chino II Desalter from 10 to 20.5 mgd. The project includes two new cartridge filters, two new reverse osmosis systems, a decarbonator, modifications to the transfer pump station, and expansion of the existing ion exchange system. The estimated construction cost is \$8.5 million.
- Assistant project engineer for the Poseidon Resources, Inc., California, seawater desalination plant siting study. Poseidon retained Carollo's services to evaluate the economic and technical feasibility of siting two, 50-mgd regional seawater desalination plants in southern California. Mr. Seacord was responsible for reviewing process design criteria, modeling the treatment process, and developing post-treatment system design criteria.
- Reverse osmosis technical expert for City of Corpus Christi, Texas, Padre Island Desalination Project. Project includes evaluation of reverse osmosis and aquifer storage recovery to supply an additional 5-mgd of drinking water capacity to Padre Island. Sources for reverse osmosis evaluated include both brackish and seawater aquifers as well as the Gulf of Mexico. Preliminary evaluation includes developing water quality data and cost estimates as wells determining the required capacity for reverse osmosis when combined with aquifer storage recovery.
- Desalting technology specialist for the Des Moines Water Works, Iowa, Membrane Study. Carollo is assisting the client with the selection of membranes for a piloting effort to produce data for the design of a full-scale integrated membrane system. This full-scale system includes a 12-mgd horizontal collector well (adjacent to the Des Moines River), approximately 12 mgd of microfiltration/ultrafiltration capacity, and an 8-mgd reverse osmosis facility for an overall blended plant capacity of 10 mgd.

Robert S. Grantham

Education

BA Government and History, Hackman Scholarship, Franklin and Marshall College, 1998

Post Baccalaureate, Engineering Science, Rutgers University College of Engineering

Professional Affiliations

American Water Works Association

California Society of Municipal Finance Officers

Water Environment Federation

Mr. Grantham specializes in financial and management analyses for wastewater, water, stormwater, and solid waste utilities. He has worked with more than 200 municipalities throughout the United States. He is currently completing or has recently completed financial consulting services for the cities of San Jose and Sacramento, California; Las Vegas, Nevada; and Scottsdale, Arizona, as well as the Sacramento Regional County Sanitation District, California. He is an expert in Proposition 218 and California Government Code §66000 requirements and applicable case law.

He is active in industry associations including the American Water Works Association (AWWA) National Rates and Charges Committee and has served on an advisory committee for the WaterReuse Association. He was a contributing author for the upcoming release of AWWA's updated M1 rates manual. He is also an author for the 2013 Water Environment Federation Stormwater Manual, writing the stormwater rates section and a case study on stormwater requirements and funding in California. He has also published in the Underground Infrastructure Management Magazine on recycled water rates and cost of service allocations and in the WEF Journal.

He has developed rates and integrated long-range financial plans for many agencies comparable in size and complexity to the Orange County Sanitation District, California. He has also helped form four utilities/joint powers authorities, developed reorganization programs for regional water and wastewater agencies, and has assisted with water and wastewater agencies issues over \$2.5 billion in new debt.

He has expertise in financial planning and analysis; cost-of-service utility rate studies (water, sewer, stormwater, recycled water, and solid waste); capital facilities charges; utility formations; utility valuations; economic/feasibility analysis; asset management; bond financial advisory;

management/organization studies; and litigation/expert witness.

- Lead financial analyst for the One Water LA 2040 Plan for the City of Los Angeles Department of Public Works, Bureau of Sanitation. The One Water LA 2040 Plan is a regional effort that aims at a higher level of integration among City departments and regional players involved in the management of water. As the prime consultant on this project, Carollo is in the process of developing a baseline of existing and future conditions that will help the City of LA achieve the goals set up by Mayor Garcetti in Executive Directive No. 5.

- Project manager for the Comprehensive Rate Study for the City of Oceanside, California. Carollo developed near- and long-term financial forecasts, updated capital facilities charges, and analyzed retail and wholesale rate structures for water, wastewater, and recycled water for the City. The project included a Citizen's Advisory Committee process designed to provide an overview of the facilities master plan and financial and rate program, facilitate open discourse, and garner buy-in from the Utilities Commission and Council.

- Partner-in-charge for Wastewater Cost-of-Service Study for the City of Riverside, California. Carollo has assisted the City with its utility financial planning since 2001 and is currently developing a comprehensive water rate update and on-going bond and financial planning for the wastewater fund. The project included development of a \$700-million Capital Improvement Program; cost allocations to assign operations and maintenance and capital costs to flow, biochemical oxygen demand, and total suspended solids; and a 5-year user rate and connection fee schedule that went through the Proposition 218 approval process.

- Financial analyst for the Sewer Master Plan and Asset Management Services for the San Francisco Public Utilities Commission, California. Carollo

collaborated with the Collection System Division (CSD) to prepare the 2015 Collection System Asset Management Plan, which compiled the levels of service, life-cycle management, financial summary, information management, and improvement and monitoring recommendations pertaining to the collection system.

- Principal-in-Charge for the Water, Sewer, and Recycled Water Rate Study for the South Coast Water District, California. Carollo completed a comprehensive cost-of-service and rate design study. The review addressed recent changes to the California legal environment, notably the San Juan Decision, as well as mandates from the State to cut water use by 25 percent. In addition, Carollo held nine public workshops with the Board and community to develop rates in an open, transparent, and communicative process.
- Project director for Financial Master Plan for the Monte Vista Water District, California. Carollo developed a 30-year financial plan and rate model for the District. Through an a collaborative rate setting process, Carollo provided the District with a user-friendly and efficient financial planning model to forecast short- and long-term impacts of capital, water supply, and operating needs.
- Project director for the Regional Wastewater Facility 10-Year Funding Strategy and Program Support for the City of San José-Santa Clara, California. Carollo has assisted the City of San José-Santa Clara with their Regional Wastewater Facility, providing financial, planning, and program support since 2013. Financial planning included the development of a 10-year CIP funding strategy for a 10-year capital program. Most recently, Carollo worked with the client to update method used to share capital costs between the owner and wholesale agencies.
- Project manager for the Water, Wastewater, and Stormwater Cost-of-Service and Rate Study for the San Francisco Public Utilities Commission (SFPUC), California. Carollo reviewed available financial and customer records and the design of SFPUC's system to develop an appropriate and reasonable cost-to-benefit nexus. In addition, Carollo designed various rate design alternatives to provide greater revenue stability, billings ease, and customer understanding.
- Financial planning lead for the Independent Asset Evaluation Services for the City of Stockton, California. For the privatization contract between the City of Stockton and OMI-Thames, Carollo assessed and valued all of the City's aboveground water and wastewater assets. In addition, Carollo also provided a risk prioritization that could be used to advise repair and replacement projects throughout the contract period.
- Financial analyst for the Zone 7 03-04 Asset Management Study for the Alameda County Flood Control and Water Conservation District, California. Carollo conducted a 4-phased asset management study for Alameda County's Zone 7 Water Agency that encompassed Zone 7's water treatment plants, pump stations, wells, storage facilities, and distribution system. The results of this study provided Zone 7 with an overall asset management/implementation plan, including integration of its different business units, optimization of internal and external operations and activities, and allowance for the detailed management of crucial information.
- Project manager for the Facility Reserve Charge Analysis study for the Contra Costa Water District. Carollo reviewed Contra Costa Water District's (CCWD) current methodology for determining both untreated and treated water connection fees and recommended a suitable methodology for CCWD's future connection fees, or as CCWD refers to them, Facilities Reserve Charges (FRC).
- Project manager for the Cost-of-Services Rate Study for the Eastern Municipal Water District, California. Carollo is investigating water budgets for commercial users under the new cost-of-service analysis. Furthermore, Carollo is assisting EMWD to develop a more resilient and financially stable rate structure that can better weather future demand changes.
- Project director for 2015 Wastewater Cost-of-Service for the Carlsbad Municipal Water District, California. Carollo has currently completed a cost of service and rate design for the sewer system for the Carlsbad Municipal Water District (CMWD), a subsidiary district to the City of Carlsbad. The project included developing the revenue requirement, cost of service analysis, and functional allocation. It also provided recommendations for a new customer class rate.

Kevin J. Krajewski, P.E.

Flow Monitoring

Education

B.S., Mechanical Engineering,
University of California – Davis,
1995

Registration

Mechanical Engineer, CA (M31744)

Joined V&A

1996

Total Years of Experience

21 years

Training and Certifications

- ◆ National Association of Sewer Service Companies (NASSCO) Pipe and Manhole Assessment Certification, 2007
- ◆ Asbestos Awareness
- ◆ Confined Space Entry-Certified
- ◆ Basic CPR/First Aid

Publications

- ◆ "Collection System Flow Monitoring Technology at EBMUD," WEFTEC Annual Conference, 2009
- ◆ "Sacramento Regional County Sanitation District Interceptor Sulfide Generation Model," WEFTEC Annual Conference, 2007
- ◆ "Sacramento Regional County Sanitation District Interceptor Sulfide Generation Model," WEFTEC Annual Conference, 2007
- ◆ "Ahead of The Flow," Public Works Magazine, 2006
- ◆ "Oro Loma Sanitary District Bockman Lift Station: Flow Monitoring and I/I Analysis – A Case Study," CWEA Conference, 2004
- ◆ "Cost-Effective Collection System Assessment," HWEA Collection Systems Conference, 2003

Experience Summary

Kevin Krajewski's experience includes flow monitoring, condition assessment, design, and cost analysis of sanitary and storm sewer facilities and collection systems. He has developed inventory and condition assessment databases for collection systems. Kevin has served as the QA/QC advisor and data manager on dozens of projects for V&A. In addition, he has managed multiple flow monitoring projects and provided field support throughout California.

Relevant Project Experience

- **City of Modesto Flow Monitoring project, CA** - Completed sanitary sewer flow monitoring and inflow and infiltration (I/I) analysis. The project was conducted over a 3-month period at 35 flow monitoring sites, chosen to be the best model 10 basins and multiple sub-basins within the City collection system.
- **City of San Jose North San Jose Storm water Flow Monitoring Services, CA** - Installed flow meters in various locations in the storm water system to monitor storm sewer flow and rainfall within the area. Downloaded rainfall data from monitoring sites and performed a cursory quality control check for accurate and valid information. Produced final reports for use by the City.
- **East Bay Municipal Utility District Flow Monitoring Technologies Study that included 31 flow monitoring sites for 40 months and rainfall monitoring at 7 locations, CA** - Compared and evaluated 10 different flow monitors to evaluate the efficacy of various flow metering types and technologies. The results, conclusions and recommendations of the study solely took into account the needs of EBMUD with the goal of establishing several permanent flow monitoring sites utilizing the equipment best suited for the site conditions.
- **City of San Jose, CA –Sanitary Sewer System Manhole Condition Assessment and Flow Monitoring. Project** -- Conducted an initial condition assessment of 51 manholes along an inactive sanitary sewer alignment located within the Canoas Creek easement. Reviewed 3,380 linear feet of CCTV video and completed 21 flow monitoring projects totaling 211 flow monitoring sites over 52 weeks.
- **El Dorado Irrigation District Sewer, CA – Flow Monitoring and Condition Assessment** -- Completed corrosion condition assessment and report for 6 lift stations. Provided installation, maintenance, calibration and download services for 14 open channel flow meters, 16 pump station loggers and 7 rain gauges during a 3-month period for an I/I study. Prepared I/I analysis, report and remediation recommendations.
- **Sewerage Agency of Southern Marin, CA, Sanitary Sewer Flow Monitoring and Inflow/Infiltration Study** -- Flow monitoring and inflow and infiltration (I/I) analysis at 34 locations within the collection system. The majority of the flow monitoring was conducted over a three-month period.



Acknowledgement of Addenda



Morro Bay Public Works

REQUEST FOR PROPOSAL/QUALIFICATIONS FOR WATER ENGINEERING AND PLANNING SERVICES - "ONEWATER" MORRO BAY

REVISED ADDENDUM NO. 1

February 6, 2017

Interested parties are hereby informed that the Request for Proposals issued January 23, 2017 for the above project has been amended by the following information. A signed copy of this sheet acknowledging the receipt of this addendum shall be included with Proposals.

A. Pre-Proposal Meeting

A non-mandatory pre-proposal meeting for this request for proposal (RFP) will be held at 11:00 AM on February 9, 2017, at the Veteran's Memorial Building, located at 209 Surf Street, Morro Bay, CA 93442.

Rob Livick, PE, Public Works Director/City Engineer

2-6-2017

Date

Acknowledgement of Revised Addendum #1

2/08/2017

Date



Morro Bay Public Works

REQUEST FOR PROPOSAL/QUALIFICATIONS FOR WATER ENGINEERING AND PLANNING SERVICES - "ONEWATER" MORRO BAY

ADDENDUM NO. 2

February 17, 2017

Interested parties are hereby informed that the Request for Proposals issued January 23, 2017 for the above project has been amended by the following information. A signed copy of this sheet acknowledging the receipt of this addendum shall be included with Proposals.

A. Page Limits

There is no limit to the total number of pages for the proposal only those sections specifically listed in the RFP.

B. Fees

The City's expectation is the proposer will provide a detailed fee estimate with rate sheets for the for the proposed scope. The final scope and fee estimate will accompany contract after a qualification based selection; and a scope and fee negotiation.

C. DBE

Disregard any reference to "DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM requirements. While the City encourages the use of DBE whenever possible, there is no DBE goal or requirement for this project.

D. SCOPE ITEMS

As discussed at the non-mandatory pre-proposal meeting, the proposal should address the following issues:

1. Early I&I reduction strategies, to influence the design of the City's new Water Reclamation Facility and major new pump station and force main project.
2. Potential for relocation the City's Water Treatment Plant to a new location outside the threat from coastal and flooding hazards and be compatible with the surrounding land uses.
3. Coordinate with the City's ongoing update to its General Plan and Local Coastal Plan to insure demand projections are adequate.
4. Review the rate schedules and provide a analysis of fiscal sustainability.
5. Consider the presentation of interim deliverables in a workshop format, that will walk staff through the analysis and conclusions.



Rob Livick, PE, Public Works Director/City Engineer

2-17-2017

Date



Acknowledgement of Revised Addendum #2

2/20/2017

Date



Agreement Review Comments

AGREEMENT REVIEW COMMENTS

We have reviewed the City's Agreement for Consultant Services. We do not have any conflicts or exceptions to the terms and conditions.

We have listed below some suggested changes to the Agreement.

Section 9 (b): Add the following to the end of this paragraph:

"Notwithstanding the foregoing, for any claim alleging Consultant's negligent performance of professional services, Consultant's obligations regarding the City's and/or District's defense under this section include only the reimbursement of the City's and/or District's reasonable defense costs incurred to the extent of Consultant's negligence as expressly determined by a final judgment, arbitration, award, order, settlement, or other final resolution."

Section 9, New Subsection (d):

"(d) Notwithstanding the foregoing, Consultant shall not be responsible for warranties, guarantees, fitness for a particular purpose, breach of fiduciary duty, loss of anticipated profits or for economic, incidental or consequential damages to the City, the District or any third party arising out of breach of contract, termination, or for any other reason whatsoever. Additionally, Consultant shall not be responsible for acts and decisions of third parties, including governmental agencies, other than Consultant's subconsultants, that impact project completion and/or success."

New Sections:

###. CITY/DISTRICT-PROVIDED INFORMATION AND SERVICES.

City and District shall furnish Consultant available studies, reports and other data pertinent to Consultant's services; obtain or authorize Consultant to obtain or provide additional reports and data as required; furnish to Consultant services of others required for the performance of Consultant's services hereunder, and Consultant shall be entitled to use and rely upon all such

information and services provided by City and/or District or others in performing Consultant's services under this Agreement.

##. ESTIMATES AND PROJECTIONS.

In providing opinions of cost, financial analyses, economic feasibility projections, and schedules for potential projects, Consultant has no control over cost or price of labor and material; unknown or latent conditions of existing equipment or structures that may affect operation and maintenance costs; competitive bidding procedures and market conditions; time or quality of performance of third parties; quality, type, management, or direction of operating personnel; and other economic and operational factors that may materially affect the ultimate project cost or schedule. Therefore, Consultant makes no warranty that the City's and/or District's actual project costs, financial aspects, economic feasibility, or schedules will not vary from Consultant's opinions, analyses, projections, or estimates.

##. THIRD PARTIES.

The services to be performed by Consultant are intended solely for the benefit of the City and the District. No person or entity not a signatory to this Agreement shall be entitled to rely on Consultant's performance of its services hereunder, and no right to assert a claim against Consultant by assignment of indemnity rights or otherwise shall accrue to a third party as a result of this Agreement or the performance of Consultant's services hereunder."